

The Mining Journal.

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The Mining Journal is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2299.—VOL. XLIX.

LONDON, SATURDAY, SEPTEMBER 13, 1879.

[WITH SUPPLEMENT.] PRICE SIXPENCE. PER ANNUM, BY POST, £1 4s.

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Banks, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.
Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.
BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or part:—
100 Cambrian, offer wtd. 100 Javali, 7s. 3d. 10 Richmond, £8½.
25 Colorado, £1¼. 20 Leadhills, £2 8s. 3d. 15 Tankerville, £3.
10 Cwm Brynno, 21s. 20 Great Laxey, £16¼. 30 Van Consois and Glyn
20 East Van, £1 2s. 6d. 20 Morfa Du, 15s. 20 Amalgamated, 5s.
10 Eberhardt, £2 ½. 100 Pentreath, 4s. 25 West Ashton, 16s. 3d.
25 Frontino, £2 7s. 6d. 25 Parys Corporation, 10s. 25 Wye Valley, 20s.
20 Herodsfoot, £2½. 100 Penrith, 1s. 3d. 10 West Chiverton.

* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

RAILWAYS—SPECIAL BUSINESS.

FOREIGN BONDS—SPECIAL BUSINESS.

Fortnightly accounts opened on receipt of the usual cover.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.

RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS, TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.

Accounts opened for the Fortnightly Settlement
A Stock and Share List free on application.

Mr. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
75 Almada, 6s. 9d. 20 Frontino, £2 8s. 9d. 50 Parys Copper, 10s. 6d.
50 Bodirris. 20 Great Laxey, £16¼. 150 Pentreath, 4s. 3d.
30 Blue Tent, £2. 100 Port Phillip, 10s. 100 Port Phillip, 10s.
10 Colorado, 30s. 50 Glenroy, 10s. 6d. 30 Pandora, 11s.
100 Chontales, 6s. 30 Herodsfoot, £2½. 20 Richmond, £8½.
5 One Copper, £22. 75 Javali. 20 Roman Gravel, £8½.
50 Canada Gold. 40 Kapanga, 6s. 10 Santa Barbara, 37s.
3 Carn Brea, £32½. 25 Lead Era. 15 South Frances.
100 Don Pedro, 14s. 3d. 20 Leadhills, £2½. 10 Tamar Silver-Lead.
20 Devon Consols, £2. 70 Morfa Du, 16s. 6d. 100 Tankerville, £3.
2 Dolcoath, £23½. 40 Marke Valley, 14s. 20 Tankerville, £3.
15 East Lovell, £2. 15 Mellanear, £3 8s. 9d. 5 Van, £16.
30 Eberhardt. 10 Minera. 10 Wheel Grenville.
10 East Pool, £15¼. 25 New Quebrada, £2 11s. 3d. 20 Wheel Peavor, £12½.
25 East Van, 21s. 6d. 100 Nouveau Monde. 150 Yorke Peninsula, 3s. 3

IMPORTANT TO INVESTORS.

TIN is again rising, and the improvement is likely to continue. Shares in BOUND Tin Mines may now be bought with advantage, and an investment at present prices will, in all probability, show very profitable results before the end of the year. The following are particularly recommended:—Wheal Peavor, South Wheel Frances, South Condurrow, East Pool, Wheal Grenville, Wheal Jane, and West Peavor.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

A complete and reliable List of all the Leading Investments (published on the first of each month) may be obtained free on application to—

WILLIAM HENRY BUMPUS, SWORN BROKER.

OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.

BANKERS: THE NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

MESSRS. JONES AND HOUSTON, 25, CROSBY HALL CHAMBERS, LONDON, E.C.

STOCK AND SHARE DEALERS, AND GENERAL MINING AGENTS.

SPECIAL BUSINESS in the following Shares, which we can honestly and boldly recommend either to hold for dividends or a great rise in market value:—
BRYN GLAS, £2.
DON PEDRO, 15s. 6d.
PANT-Y-MWYN, £2 10s.
DON PEDRO, which we have so strongly recommended for investment, are again in the ascendant, and have risen 50 per cent. within the last fortnight, and can hardly fail to have a similar rise immediately.

BRYN GLAS.—An interest in this proved valuable mine should be secured without delay, as the shares must shortly command a high premium.
BANKERS: LONDON AND PROVINCIAL.

MR. E. J. BARTLETT, BRITISH AND FOREIGN STOCK AND SHARE DEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C.

JUST OUT,

"HOW TO INVEST," post free, One Shilling, Twelfth Edition, enlarged.

JOHN B. REYNOLDS, STOCK AND SHARE DEALER,
37, WALBROOK, LONDON,
ESTABLISHED 20 YEARS.—BANKERS: LONDON AND SOUTH-WESTERN.
Confidential enquiries quickly answered. Telegrams promptly attended to. Close prices and accurate intelligence may be relied upon.

MR. T. E. W. THOMAS, STOCK AND SHARE DEALER,
3, GREAT WINCHESTER STREET, E.C.
SPECIAL BUSINESS in the following:—
20 Great Laxey, £16¼. 30 Morfa Du, 15s.
50 Bodirris. 20 Van Consois and Glyn. 25 Parys Corporation, 10s.
15 East Van, 21s. 6d. 20 United, 8s. 10 Richmond, £8½.
10 East Lovell, £2½. 25 Herodsfoot, £2½. 25 Tamar Silver-Lead.
25 Flagstaff, 6s. 3d. 20 Hultafall. 20 West Peavor, £4 7s. 6d.
20 Leadhills, £2 5s.

MR. GEORGE BUDGE, STOCK AND SHARE DEALER,
9, GRACECHURCH STREET, LONDON, E.C. (Established 26 years).
ALL BUSINESS TRANSACTED FREE OF ANY CHARGE FOR COMMISSION.

Notice to Investors and Speculators.

Mr. BUDGE has SPECIAL DEALINGS in:—
2 Botallack, £24¼. 40 East Lovell, £2. 60 Panicle Copper, £1 1s. 9d.
100 Bodirris. 200 Gold Run, 3s. 150 Port Phillip, 10s.
4 Carn Brea, £30½. 40 Glenroy, 10s. 6d. 30 Pandora, 11s.
100 Chapel House. 50 Herodsfoot. 20 Richmond, £8½.
50 Oakmore Ordinary. 100 Hington Down, 4s. 6d. 30 Tankerville, £3.
25 Cook's Kitchen, £2. 125 Kilfrith, 2s. 6d. 125 Tamar Silver-Lead.
25 Devonport and Tiverton Brewery. 50 Marke Valley, 17s. 6d. 30 Wheel Peavor.
1 Dolcoath, £32½. 25 Mellanear, £3 8s. 9d. 30 West Frances, £5¼.
200 Don Pedro. 65 North Levant, 20s. 5 West Seton, £20.
75 East Canadon. 25 New Hendra. 35 West Tolgus, £27.
55 East Van, 21s. 50 Penrhall. 50 West Chiverton.
17 East Pool, £14¼. 15 Phenix. 50 West Fawley Bridge.
100 Parys Corporation. 65 Wye Valley.

BUYERS or SELLERS of any of the above, or holders of any Stocks or Shares not readily marketable, will do well to apply to Mr. BUDGE.

HOME MINES—LEAD, TIN, AND COPPER.

BRITISH LEAD, TIN, and COPPER having been lower in price than ever known, it is at last satisfactory to observe an upward tendency. The general feeling is that these METALS will now continue to rise in price.

Most of our HOME LEADING DIVIDEND and PROGRESSIVE LEAD, COPPER, and TIN MINE SHARES are now at a mere NOMINAL figure, and we strongly recommend immediate purchase in many of them, a List of which can be had on application.

MESSRS. PETER WATSON AND CO.,
54, OLD BROAD STREET, LONDON, E.C.

UNITED STATES AND COLONIAL MINES.

IMPORTANT INFORMATION REGARDING THE ABOVE.

BUYER and SELLER of SHARES at the close Market Price of the day. SHAREHOLDERS and INVESTORS may rely on all business being punctually and faithfully carried out.

A DAILY LIST OF PRICES sent (free) on application, either personally or by post.

BANKERS: THE ALLIANCE BANK (Limited).
MESSRS. PETER WATSON AND CO.,
54, OLD BROAD STREET, LONDON, E.C.

BRITISH AND FOREIGN MINES

SHAREHOLDERS and INVESTORS desirous of PURCHASING or SELLING SHARES in COPPER, TIN, LEAD, GOLD, or SILVER MINES can do so at market prices, and obtain information regarding the same on personal application, or by letter, of—

MESSRS. PETER WATSON AND CO.,
54, OLD BROAD STREET, LONDON, E.C.
Telegraphic Messages punctually attended to.

STOCK AND SHARE MARKETS.

Prices of STOCKS and SHARES in RAILWAYS, BANKS, ENGLISH and FOREIGN GOVERNMENT SECURITIES, GAS, MINES, INSURANCE, and other Stock Exchange Securities, and various important information telegraphed instantaneously from the STOCK AND SHARE MARKETS direct into the offices of—

MESSRS. PETER WATSON AND CO.,
54, OLD BROAD STREET, LONDON, E.C.

From 11 A.M. to 4 P.M. (Saturdays 11 A.M. to 2 P.M.) for the information of customers.

MR. ALFRED E. COOKE, STOCK AND SHARE DEALER,
76, OLD BROAD STREET, LONDON,
ESTABLISHED 1853.

Mr. COOKE points with satisfaction to the rise in the following Shares, recently recommended by him to his clients:—

	Recommended at	Price since
WHEAL CREBOR	£2	£6¼
WEST PEAVOR	2	4
HERODSFOOT	1½	4
SOUTH FRANCES	4	10

SPECIAL ADVICE, with LIST of SHARES ABOUT TO ADVANCE, given to new correspondents on receipt of fee—10s. 6d.—which will be allowed if business results.

Stock Exchange business done on best terms.

STOCKS AND SHARES,

FOREIGN BONDS, TELEGRAPHS, TRAMWAYS, RAILWAYS, AND OTHER LEADING SECURITIES.

MR. JAMES STOCKER, STOCKBROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

ESTABLISHED 1848.

SPECIAL BUSINESS in BRITISH and FOREIGN MINES.

BANKERS: LONDON AND WESTMINSTER.

FERDINAND R. KIRK, 5, BIRCHIN LANE, LONDON, E.C.

FORTNIGHTLY ACCOUNTS opened, on receipt of the usual "cover," in Railways Home and Foreign, Mining Shares, Foreign Bonds, and certain Miscellaneous Securities.

"THE WEEK"—A SEPARATE EDITION from that which appears in the Mining Journal is published every Wednesday evening, containing "Notes and Hints on the Stock Markets," with Closing Prices. May be had on application.

BANKERS: LONDON AND WESTMINSTER, Lothbury.

WILLIAM GABBOTT, STOCK AND SHARE DEALER,
8, DRAPER'S GARDENS, LONDON, E.C.

BANKERS: THE NATIONAL PROVINCIAL BANK OF ENGLAND.

MESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS,
85, GRACECHURCH STREET, LONDON, E.C.

THE CREBOR DISTRICT.—Having our own independent agents we can furnish reliable information respecting mining properties in this neighbourhood. Our agent will inspect Crebor on Tuesday next. A copy of his report furnished on our usual terms.

WHEAL CREBOR MINE.—Extract from Messrs. ENDEAN and Co.'s advertisement in this Journal July 5 last:—"We strongly recommend Wheal Crebor shares for a rapid rise in price." On that day Crebor were 2½ to 3; to-day they are 6½ to 6¾, showing a rise of over 100 per cent. in five weeks.

TAMAR MINE.—This mine is in the same district as Crebor, and shares should be bought at present low price.

BODIRIS MINE.—Splendid specimens of ore from the Maes-y-pwll lode, just received, may be seen at our office.

Full particulars on application to

Messrs. ENDEAN and CO., 85, GRACECHURCH STREET, LONDON, E.C.

MR. THOMAS THOMPSON, JUN., STOCK BROKER,
16, ST. SWITHIN'S LANE, E.C.

Mr. THOMPSON transacts business in every species of Stock Exchange and Mining Securities.

Mr. THOMPSON affords reliable information to investors, and can give, when desired, a list of first-class Stocks and Shares, yielding 4 to 10 per cent. dividends upon present prices.

Mr. THOMPSON'S weekly Circular may be had on application.

MESSRS. J. TAYLOR AND CO.,

MINING ENGINEERS AND INSPECTORS,
86, LONDON WALL, LONDON, E.C.

Have Agents in England, Scotland, Wales, and on the Continent.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C.

Can SELL the following SHARES at prices annexed:—

20 Cambrian, offer wtd.	50 Glenroy, 9s. 6d.	30 Morfa Du, 15s. 6d.
50 Chontales, 6s. 6d.	5 Lisburne, £35.	10 Richmond, £2 8s.
30 Eberhardt, £1 17s. 6d.	25 Frontino and Bolivia,	25 South Darren, 27s. 6d.
20 East Lovell, 30s.	£1 11s. 6d.	10 Minera, £9 7s. 6d.
25 Leadhills, £2½.	20 N. Quebrada, £2 12s. 6d.	50 Tamar Silver-Lead.
25 Herodsfoot, 2½.	50 Melanear Cop., £2 6s.	15 Tankerville, £3 2s. 6d.
50 Nouveau Monde, 15s.	50 Santa Barbara, £1 11s. 6d.	50 Victoria (London)
20 Great Laxey.	50 Scottish Austr., 39s.	Mining Company.
60 Don Pedro, 15s.	60 Pentreath, 4s. 3d.	40 Wheal Crebor, £6¾.

MR. CHARLES THOMAS, MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MR. ALFRED THOMAS, MINING AGENT, AND STOCK AND SHARE DEALER,
10, COLEMAN STREET, LONDON, E.C.

"HOW TO TAKE ADVANTAGE OF THE COMING RISE IN PRICES,"

By ALFRED THOMAS, 10, Coleman-street, E.C.
Will be forwarded to Investors upon application.

MR. EDWARD ASHMEAD, 62, CORNHILL, LONDON,
LONDON MINE AGENT, ACCOUNTANT, AND AUDITOR.

TO INVESTORS, SHAREHOLDERS, TRUSTEES.

SAFE DIVIDEND INVESTMENTS PAYING 4 TO 6 AND 8 PER CENT. PER ANNUM ON PRESENT OUTLAY.

SHARP'S INVESTMENT CIRCULAR,
ISSUED MONTHLY (post free) is a "Safe Guide."
The SEPTEMBER EDITION contains information upon all Stock and Share Investments, with ADVICE TO INVESTORS, also British and Foreign Mines, &c.

SHARP'S INVESTMENT CIRCULAR
SHOULD BE CONSULTED BY ALL STOCK AND SHARE HOLDERS. It is the most trustworthy and Reliable Publication of the day, and has a large circulation throughout the United Kingdom.

IT CONTAINS THE SAFE INVESTMENTS IN THE FOLLOWING:—

English, Foreign Railways.	Insurance, Gas, Waterworks.
Preference, Debenture Stocks.	Colonial, Foreign Stocks.
Indian, American Stocks.	British, Foreign, Colonial Mines.
Bank, Financial Shares.	Tea, Land Shares.
Tramway, Telegraph Shares.	Shipping, Dock Shares.
Municipal Bonds.	Miscellaneous Shares, &c., &c.

Market prices; Dividends upon outlay, and when payable; Reports, &c., &c.

SPECIAL BUSINESS as a BUYER in the FOLLOWING MINES:—

3 Carn Brea.	20 South Frances.	50 West Peavor.
10 Dolcoath.	50 Tankerville.	5 West Wheal Seton.
500 East Canadon.	30 Tincroft.	100 Wheal Crebor.
300 Herodsfoot.	30 Van.	50 Wheal Grenville.
50 Roman Gravel.	30 West Basset.	100 W. Kitty (St. Agnes).
10 South Crofty.	200 West Chiverton.	100 Wheal Jane.
10 South Condurrow.	40 West Frances.	50 Wheal Peavor.

N.B.—Sellers must state number and lowest price for cash.

SHARES FOR SALE in the FOLLOWING MINES:—

119 East Craven Moor.	100 Leadhills.	95 Pandora.
100 East Van.	59 Llanrwst.	69 West Craven Moor.
25 Great Laxey.	10 Minera.	200 West Pateley Bridge.

N.B.—Buyers can make offers, or prices will be forwarded.

HENRY GOULD SHARP, STOCK AND SHARE BROKER,

42, POULTRY, LONDON, E.C.—ESTABLISHED 1852.

BANKERS: LONDON AND WESTMINSTER, Lothbury, London, E.C.

TO INVESTORS IN MINES.

EAST CARADON COPPER MINE,
IN 6144 SHARES.

These shares were 7s. 6d. each in 1859, the lode out rich for copper, and in 3¼ years they were marketable at £55 each, and paid £14 13s. per share in dividends, equal to £91.853. The mine adjoins South Canadon, which, upon an outlay of £1 5s. per share, has returned £742 10s. per share in dividends, equal to £380.160. An important improvement is coming off in East Canadon, and I should not be surprised to see shares £5 each within three months, and much higher next year. Shares were done at 7s. 6d. each on Thursday, and rose to 30s. per share yesterday (Friday). They are well held in good hands, and worth attention at 30s. to 35s. per share.

WHEAL CREBOR, in 6000 shares, were 5s. each in May last. They are now £5 10s. per share, and look like going much higher.
HERODSFOOT, in 3000 shares, at £2 10s. are worth buying; they are the cheapest lead shares in the market. This mine has paid £79.508 in dividends, and well paying. I advise the purchase of the shares.

HENRY GOULD SHARP, STOCK AND SHARE BROKER,

42, POULTRY, LONDON, E.C.—ESTABLISHED 1852.

BANKERS: LONDON AND WESTMINSTER, Lothbury, London, E.C.

MR. JOHN BATTERS, STOCK AND SHARE DEALER,

transacts Business in Stock Exchange and Mining Securities.
Special information to Investors in Lead Mines, also in Swedish, Canadian, and other securities.

4, AUSTINFRIARS, LONDON, E.C.

FOR SALE, the WHOLE or PART:—

100 Crebor.	3 West Chiverton.	50 Leadhills.
5 Eberby Mountain.	20 Hornachos.	20 East Canadon.
50 Herodsfoot.	20 South Frances.	

Address, H. WILKINS and Co., 3, Heybourne Villas, Tottenham.

FOR SALE, a FIRST-CLASS SECOND-HAND 80 in. CORNISH PUMPING ENGINE, with several 11 ton BOILERS.

Apply, WM. BENNETTS, Roskear, Camborne.

FOR SALE (A BARGAIN), A DIVING DRESS AND ENGINE, complete, by HEINKE and Co., London; nearly new. Cost £100; price, cash, £40. No use for same.

Apply, Mr. L. NEWTON, 36, Bridge-street, Newport, Mon.

MR. THOMAS THOMAS, MINERAL AGENT AND ASSAYER,

COPPER ORE YARD, STRAND, SWANSEA.

Sales and Purchase of Minerals and Metals arranged. Assays and Analyses carefully conducted. References given.

MR. JOHN L. M. FRASER,

(Fourteen Years at the Great Miners Mines)

CONSULTING MINING ENGINEER—SECRETARY AND AUDITOR—ROYALTY AND MINERAL ESTATE AGENT—SHARE DEALER—MINES, MINERALS, AND MACHINERY BROKER—GREENFIELD HOUSE, WREXHAM.

BONA FIDE INVESTMENTS.

The most reliable information concerning certain rich Lead and Blende Mines that will soon double their present prices. Full particulars on application.

Parties requiring valuable Mine and Colliery Leases should apply at once, as they are rapidly rising in value. All descriptions of Mining Machinery at low prices.

MR. DAVID COWAN,

CONSULTING MINING AND MECHANICAL ENGINEER,

AND LICENSED VALUATOR,

58, RENFIELD STREET, GLASGOW.

Investigations, Reports, and Valuations made of Coal, Iron, Slate, Pyrites, and other properties at home and abroad. Enquiries for Road and Railway Materials, Mining Plant, Pipes, Castings, &c. Plans, &c. of the most modern and economical mining appliances, fittings, and arrangements.

I have been long acquainted with the principal Coal and Iron Works in the North, with the Slate Quarries in North Wales, and for many years was Chief Engineer of the Tharsis Mines, Works, and Railway in Spain.

MESSRS. D. C. DAVIES, F.G.S., AND SON, MINING

GEOLOGISTS, ENGINEERS, AND SURVEYORS, OSWESTRY.

Intimate that they UNDERTAKE the FOLLOWING DUTIES in connection with Metalliferous Mines, Collieries, Slate and other Quarries, Mining Plant and Mineral Properties generally, at home and abroad.

Preliminary examinations and Surveys.
The Preparation of Plans for Systematic Working, with Supervision where required.

Periodical Surveys and Writing up of Plans.
Valuation for Probate, Sale, or Liquidation. The investigation of all matter pertaining to such Properties and Business.

The Analysis of Minerals. The highest references given.

MINE OFFICES.—GOSWEN, OSWESTRY.

PARIS, 1875.
FROEYER MEDAL, 1867.

ORDER OF THE CROWN OF PRUSSIA.

FALMOUTH, 1867.
SILVER MEDAL, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE for the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10, 28'30, 27'10, 28'40, 28'70 metres. Total advance of south heading during January was 121'30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere ($7\frac{1}{2}$ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL; and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them a value unapproached by any other system of Boring Machine.

THE MCKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUNNELLING, QUARRYING, AND SUB-MARINE BORING.

The MCKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical device. They contain the fewest parts—have no weak parts—act without SHOCK upon any of the operating parts—work with a lower pressure than any other Rock Drill—may be worked at a higher pressure than any other—may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines—will give the longest feed without change of tool—work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against grit and accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL, IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

MCKEAN AND CO.

ENGINEERS,
OFFICERS,

5, RUE SCRIBE, PARIS


MANUFACTURED FOR MCKEAN AND CO. BY
MESSRS. P. AND W. MACLELLAN, "CLUTHA IRONWORKS,"
GLASGOW.

AWARDED HONOURABLE MENTION AT THE PARIS
EXHIBITION.

MINERS' LAMP

AND
GAUZE MANUFACTORY.

Established 1807—century.

JOSH. COOKE AND CO. 
SAFETY LAMPS

Medal for Improved Invention, London, Kensington, 1874.

Ditto Excellence of Workmanship, Wrexham, 1876.

Illustrated Price Lists free, by post or otherwise.

MIDLAND DAVY LAMP WORKS,

BELMONT PASSAGE, LAWLEY STREET,

BIRMINGHAM.

MANUFACTURERS OF WILLIAMSON'S PATENT DOUBLE

SAFETY LAMP.

ACCIDENTS OCCUR DAILY!!

ACCIDENTS OF ALL KINDS

Provided against by a Policy of the

RAILWAY PASSENGERS ASSURANCE COMPANY,

The Oldest and Largest Accidental Assurance Company.

The Right Hon. LORD KINNAIRD, Chairman.

SUBSCRIBED CAPITAL ... £1,000,000.

ANNUAL INCOME, £214,000.

A fixed sum in case of death by accident, and a weekly allowance in the event of injury, may be secured at moderate premiums.

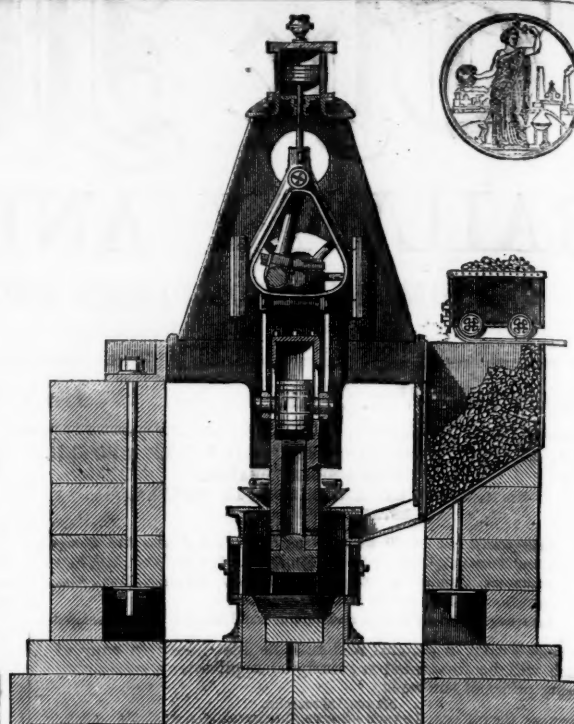
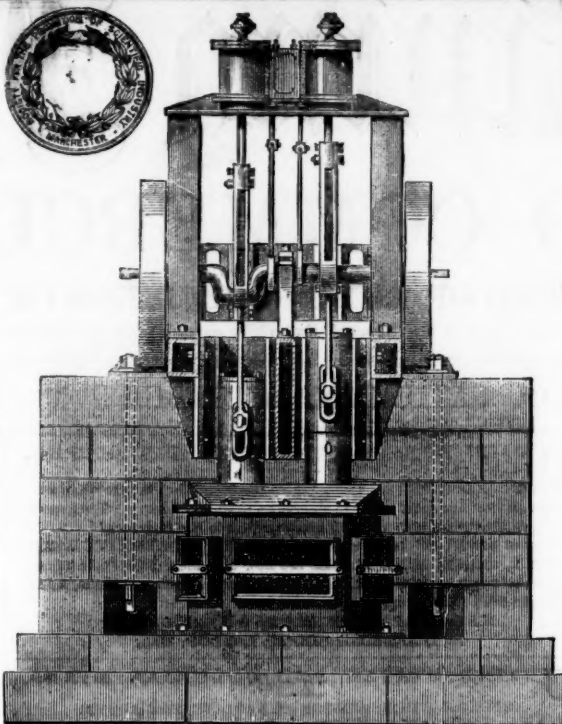
BONUS ALLOWED TO INSURERS OF FIVE YEARS' STANDING.

£1,300,000 have been paid as compensation.

Apply to the Clerks at the Railway Stations, the Local Agents, or

64, CORNHILL, LONDON.

WILLIAM J. FIAN, Secretary.



SHOLL'S PATENT DIRECT-ACTING PNEUMATIC STAMPERS,

For Pulverising Tin and Lead Ores, Gold Quartz, &c.,

SOLE MAKERS FOR CORNWALL,

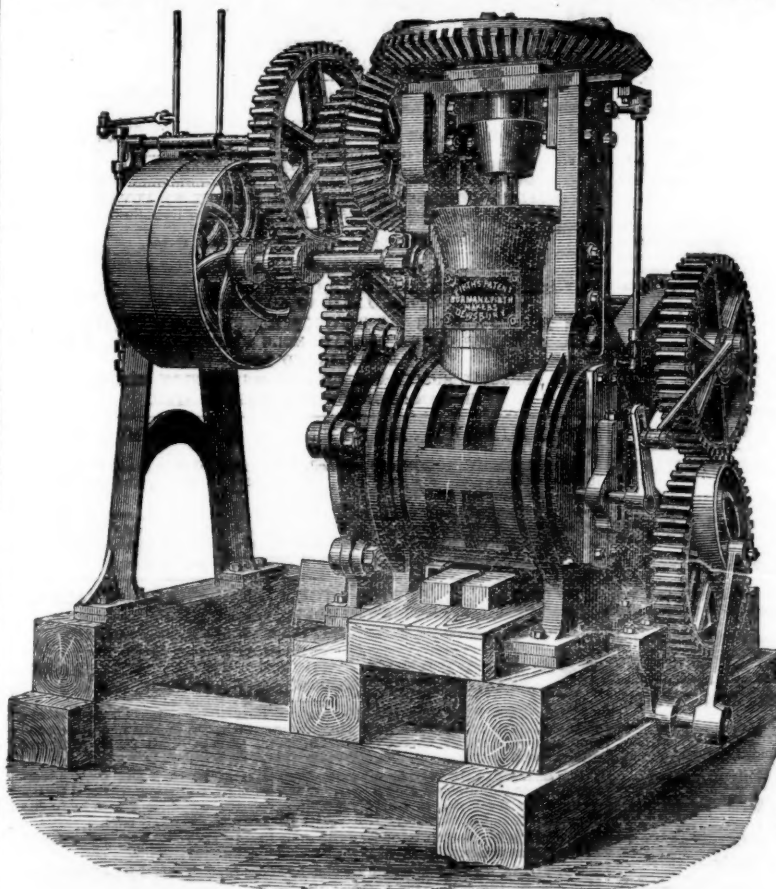
N. HOLMAN AND SONS,

ST. JUST FOUNDRY, NEAR PENZANCE, CORNWALL.

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Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,
Mining Engineer, Wakefield.

(Formerly Student at the Royal Bergakademie, Clausthal.)

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The publication of the Lecture this week is unavoidably postponed.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath Dr. Vos Groddeck, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

THE FRENCH PATENT LAWS.

It can scarcely be doubted that much of the opposition that has been offered both in this country and elsewhere to the recognition of patents for invention might be traced to the imperfect knowledge generally possessed as to the precise nature and object of patent laws, and as to the relative advantages which those laws secure to the patentee and to the public. Defining an invention as that which produces something that will secure to those who choose to adopt it an advantage which was not previously within their reach, it cannot be regarded as an injustice to require that the user shall pay something for the advantage he receives, on the same principle that he is required to pay for what he purchases to satisfy his other daily wants. To prevent him using another's goods or adopting a new invention without payment does not deprive him of anything which he before possessed, whilst by making such payment compulsory encouragement is offered to the possessors of goods or knowledge to place them in the market for the convenience of those who may wish to buy them. In the case of ordinary merchandise the question of ownership is so easily determined that the common system of sale and purchase affords ample protection to buyer and seller, but with knowledge as applied in invention the case is not so simple, because the details of the invention being once published everyone in the trade with which the invention is connected is at least as favourably placed as the inventor himself for the production of that which is invented.

Under these circumstances it is evident that the inventor will be disinclined to give his rivals in business the advantage of his superior knowledge unless he be suitably compensated, and well arranged patent laws afford the readiest means of enabling the community to secure an invention on reasonable terms, but terms that satisfy the inventor. The inventor is granted what is really no more than a royalty for a few years, on the condition that the invention becomes the undisputed property of the community at the end of that term. The inventor is thus always paid by results. If his invention be much wanted, and sold so cheaply as to create a market for it, his royalty during his term of protection well repays him for his ingenuity; if his invention be of little or no value, or if he demands more for it than would be purchasers think just, the invention is ignored, and he gets no royalty. But it must be acknowledged that sometimes purchasers are too exacting if sometimes inventors are too grasping, and it is probable that if both parties were aware that the law is for their mutual advantage conflicts between inventors and those who could use inventions would be less common, and increased advantage would result to all concerned. In this country we have the manual of Goodeve, which supplies much information with regard to decided cases, and may afford some guidance to inventors and others in determining questions which arise from time to time in connection with patents; but we have nothing of the character of Dr. Malapert's Commentary on the French Patent Laws,* which in a large volume of nearly 500 pages, and obtainable for 8 frs. (6s. 6d.) supplies, in language readily intelligible to the ordinary workman and manufacturer, information and observation upon every point of importance either to inventors or the public which has been raised in the French Courts since the patent laws have existed in that country.

It must be assumed, says Dr. Malapert, that everyone has the right to divulge or keep the secret of his works and of his conceptions. Generosity would be no virtue if it were compulsory. So long as the inventor shall have kept his secret from others, and so long as no other shall have made the same discovery, it may be said that the secret is the property of its author. All at once the idea becomes known to the public, and it instantly becomes, whatever may be said to the contrary, the common property of all those who receive it. It is theirs from the moment they have understood it, and are in a position to put it in practice; it belongs to them as much as the air which they breathe, or the light which shines upon them. They are in the possession of the truth, which they have as much right to as the inventor (discoverer). Hence it follows that ideas and knowledge are not susceptible of appropriation by individuals, so that it must not be said that an invention when divulged can be property. Let us distinguish, then, between two periods, quite distinct, in the history of an invention. The first is that during which the inventor has kept his secret; the second follows the divulging of the discovery. There is a certain peril, however, for society not to have the secret of inventions, more than one having been lost on the death of its author, and only re-found long after, which has caused large sacrifices of time and money. Thus Canon Schmidt practised lithography at Munich before Senefelder, who sought for a long time before he rediscovered a practicable process. For this long and troublesome effort were necessary which might have been otherwise utilised, and this is only an example of a thousand similar cases.

Being useful to obtain the divulging of inventions the effort has been made to reconcile the interests of the State and of inventors, or, if the term be preferred, the pretensions of the community and those of individuals. Society has not been too exacting towards inventors, for it has declared that they are free to keep their secrets, but that if they will describe such secret accurately and completely they shall be secured a monopoly for a certain time. This is a contract offered to all inventors, in their own interest and in that of the progress of the arts, but they are free to accept or to refuse the bargain. If the inventors accept it the Government delivers to them a document, stating that on such a day, at such an hour, and at such a minute they have deposited the description of their invention. The greatest possible publicity is given to this deposit, and everyone is notified that no one must make similar products, or employ the processes invented until the expiration of the term fixed by the patent. The bargain made in good faith must be carried out in the same way. It must not be said that the inventor had a right of property, and that the State has taken his chattel; that is not true. The State has taken nothing from him; for, once more, he who has made a discovery and has divulged the secret is incapable of effacing the knowledge. The State, on the contrary, by preventing the citizens subject to its laws from putting in practice certain ideas really infringes upon the liberty of labour. But it does so with full knowledge of the case. Its object has been to recompense the genius of the inventor, and to ensure that all and each shall be in a position in a given time to profit by an invention which will not be lost again.

The question of determining whether inventors have a right to property in their inventions is a capital one for an address and little-wits, as Dr. Malapert remarks, have made it the subject of long dissertations. It is easy to utilise it for great efforts of eloquence. On the one hand they speak of the great men who have been sacrificed, and who have died without having enjoyed the fruits of their labour, and on the other hand they throw themselves into generalities against privileges, and ding into our ears the large word liberty. These discussions are of old date and will continue, but the disputants may rest satisfied that their addresses have never convinced anyone. The arguments moreover depend on half splitting and equivocation. The law has no doubt its inconveniences, it favours the creators of futilities in the same way as it would have favoured Papin or James Watt. There is in this equality something shocking at first sight,

but the law could not foresee and provide for each particular case. Again it is said that the term of protection is too short, that the time occupied in experimenting is fatal, and that the invention becomes open to the public before the author has profited by his invention. But this also has been taken into account by the legislature, and if the law had to be re-enacted to-day it would only be in matters of small detail that any alteration would be considered necessary.

After an admirable introduction explaining the nature and object of patent laws in which the insuperable objections to a preliminary examination are pointed out, and many other questions which have been subject to discussion in this country are considered, Dr. Malapert gives a chapter on the foreign patent laws explaining the cause of their diversity referring to the controversies which have taken place on the necessity of patents for invention, the result of which may be summed up in the conclusion of three competent reporters:—"Le principe des brevets d'invention est utile d'abord, légitime ensuite;" and furnishing an outline of the International Congress of 1878 on industrial property, which, as concerns patent law, was an unquestionable failure. There is then a chronological index of the principal official documents relative to patents for invention from the date of the royal declaration of 1762 to that of the law of April, 1878. Next comes the full text of the law of July, 1844, which placed French inventors in the very favourable position they now occupy. The reader is thus well prepared for the exhaustive commentary which follows:—Each title and each article is taken in order, its object, utility, operation, and, if any, shortcomings are discussed and full particulars are then given of the various legal views and decisions which have been pronounced in connection with it, so that the privileges and responsibilities of the patentee can be accurately ascertained with the least possible trouble. The practical instruction which forms the concluding section of the volume will prove invaluable to inventors as it explains minutely what must be done and the precise manner of doing it whether it be desired to procure a patent, or to transfer or otherwise deal with it after it has been obtained. With regard to the reliability of the information given, which in a work of this class is of paramount importance, it will suffice to state that Dr. Malapert, who has regularly practised at the Paris bar since 1837, has a high reputation as a jurist, and has long given special attention to the particular branch of law connected with patents for invention, and that his colleague, Mr. Forni, also a practising barrister, is well worthy of being associated with him. The style and arrangement of the work leaves nothing to be desired, and it is admirably printed on excellent paper. Altogether it is likely to enjoy a prominent position as an authoritative book of reference upon every legal question connected with French patent law; and it is understood that the importance of the work has been so fully recognised by the French Government that the learned doctor is about to receive the honour of a professorship in one of the public institutions, which, however, will not necessitate his throwing aside his barrister's robe or remove him from the Palais de Justice.

FRICTION AND LUBRICATION.

The utilisation of the whole of the power generated being of paramount importance the avoiding of friction and attention to lubrication cannot be too carefully considered. Some two years since Professor R. H. Thurston, of the Stevens Institute of Technology, delivered a lecture before the committee of the Master Car-Builders Association of New York, detailing the well-known facts connected with friction and lubrication, and embodying such other facts as had been ascertained by himself in connection with the subject. The lecture attracted much attention at the time, and the substance of it was widely published. Since that time Professor Thurston has resumed his investigation, and the experimental work since accomplished in the mechanical laboratory of the Stevens Institute of Technology is now given in a separate volume*, which is a complete résumé of existing knowledge on this, to the engineer, most important subject. Friction is a resistance which is always met when two bodies or particles whether solid, liquid, or gaseous are compelled to move one upon another. There are three kinds of friction so-called—rolling and sliding with solids, and fluid friction with liquids and gases. These are all governed by different laws, and with each the statement of those laws as usually given in the text books probably require, Professor Thurston considers, some modification. Coulomb's law of rolling motion is first noticed, and the experiments of Morin, Dupuit, Debaure, Tresca, Clarke, and others are then noticed and commented on. Fluid friction is found to vary with the square of the velocity, and is proportional to the area of rubbing surface, and is probably independent of the pressure. In hundreds of experiments with pressures varying from 5 to 275 lbs. to the square inch he has found the friction of well lubricated journals to vary in such a manner as to prove that the law which governs such cases is quite different from that which applies with dry solids. When a lubricant is interposed between the rubbing surfaces of a revolving journal and its bearing, or between a sliding plane surface and its support, if acting effectively, it forms a fluid cushion, separating the surfaces more or less perfectly, as it is more or less viscous, and as capillarity is greater or less, thus giving the resistance to motion more or less of the character of fluid friction.

In order that any substance may be efficient as a lubricating material it must, Prof. Thurston points out, possess the following characteristics:—1. Enough body or combined capillarity and viscosity to keep the surfaces between which it is interposed from coming into contact under maximum pressure.—2. The greatest fluidity consistent with the preceding requirements—that is, the least fluid friction allowable.—3. The lowest possible co-efficient of friction under the conditions of actual use—that is, the sum of the two components solid and fluid friction should be a minimum.—4. A maximum capacity for receiving, transmitting, storing, and carrying away heat.—5. Freedom from tendency to decompose, or to change in composition by gumming or otherwise on exposure to the air, or while in use.—6. Entire absence of acid, or other properties liable to produce injury of materials or metals with which they may be brought in contact.—7. A high temperature of vaporisation and of decomposition, and a low temperature of solidification.—8. Special adaptation to the conditions as to speed and pressure of rubbing surfaces under which the unguent is to be used.—And 9. It must be free from grit and all foreign matter.

The fulness and care with which Prof. Thurston treats the various branches of the subject leave nothing to be desired, and those who carefully study the volume will certainly be competent to deal with any question relating to friction and lubrication and to the detection of adulteration. As the result of the study of the facts which he has ascertained, and of the consideration of the many hundreds of experiments made, the professor shows that the great cause of variation with well cared-for journals is alteration of pressure, and it is seen that the higher pressure within the range of these experiments give the lowest percentage of loss of power by friction. The value of the co-efficient is seen to be greatly modified by the state of the rubbing surfaces; and the necessity of keeping journals in perfect order cannot be too strongly insisted upon. A single scratch has its effect in wasting power. A journal should have its surface as smooth and as absolutely uniform as a mirror: every well kept journal has such a surface. The resistance due to friction varies with velocity, decreasing with increasing velocity—rapidly at very low speeds, as from 1 to 10 ft. per second, and slowly as higher speeds are reached until the low changes and increase at ordinary temperatures takes place, and at a very low rate throughout the whole range of usual velocities of rubbing in machinery. The consumer, he says, will usually find it economical to use that lubricant which is shown to be the best for his special case without regard to price, and will often find real economy in using the better material sufficient to repay excess in the total cost many times over. The semi-fluid lubricants are usually the most economical, in consequence of their peculiar self-regulating flow as the rubbing parts warm or cool whilst working. Where heating is not to be anticipated maxi-

mum economy is obtained by the minimum rate of supply allowable, only if that supply be maintained with absolute uniformity.

Prof. Thurston's volume is one which should be read by every user of machinery, as they will thus ascertain how to ensure the least possible waste of power, whilst manufacturers of lubricants should study it, in order to know how to produce lubricants suited to the requirements of each particular customer.

SOUTH STAFFORDSHIRE INSTITUTE OF MINING ENGINEERS

VISIT OF THE EARL OF SHREWSBURY

On Monday evening the members of the South Staffordshire and East Worcestershire Institute of Mining Engineers held their monthly meeting in the New Mining Museum, Dudley. Mr. H. Johnson (the president) occupied the chair. There were also present for a short time the Earl of Shrewsbury, Mr. C. T. Praed, M.P., and Mr. Bolam (Lord Shrewsbury's agent). The general attendance of members included Mr. W. J. Hayward (vice-president), Mr. T. Latham, Mr. W. Farnworth, Mr. R. Roper, Mr. W. J. Davies, Mr. J. Davis, Mr. J. Tomson, Mr. George Turner, Mr. Gibbs, Mr. J. G. Jones, Mr. Roper, Mr. H. J. Parton, Mr. H. Johnson, and Mr. Alex. Smith, M.I.C.E., secretary. The President explained that an excursion had been projected to the opening of the Severn Bridge below Gloucester. The Secretary would at once inform them when arrangements were completed.—Mr. G. Watkins, mechanical and consulting engineer, Wolverhampton, was unanimously elected an ordinary member.

Mr. W. J. Davies read a paper "On Mines Reports." In the concluding part of his paper the writer called attention to the Employers' Liability for Injuries Bill, which, he said, proposed to make the employer liable for injury to the person by reason of negligence of the servant in authority, which in the case of a mine would be the manager. This would give a premium to the injured party to convict the manager, who would have great difficulty in proving his innocence, because the sympathy of the men would be with the injured man. He thought the whole question was whether in the event of the Bill becoming law the men ought not to be required by law to examine the mine for themselves, as they were empowered by General Rule 30. Then, if the report of the workmen did not point to elements of danger or mismanagement the owner or manager would not be held liable.—Votes of thanks were given to Mr. Davies and Mr. Steen, of Wolverhampton, who supplemented the paper as to the reports.—The President referred to the necessity of the mining engineers stirring themselves in the matter alluded to in the paper, for it was probable that in the next session a Bill would be introduced to please Mr. Macdonald and his party.—Mr. Smith then read the notes of evidence taken before the Accidents in Mines Commission. It was again explained that the notes were private.

Previous to the meeting the members had an excursion to the Earl of Dudley's Claycroft open works, at the foot of the Wren's Nest, near Tipton. The Earl of Shrewsbury and his party were met at the station by Mr. E. Fisher Smith (the Earl of Dudley's chief agent), the President, Vice-President, and members of the Institute, and after looking over Dudley Castle and the Priory, the party drove to the open works. Messrs. Thomas Latham and R. Latham met the party, and described the workings, and the latter gentleman exhibited a large number of filberts, leaves, and part of a tree found 12 ft. below the surface of the former road, between Tipton and Sedgley. With the nuts and wood were a number of bones of a deer of large size. They were a portion of the shaft of the right ilium and ischium, with acetabulum joint; also a portion of inferior right maxillary (jawbone); portion of occipital with styloid processes missing; also the second vertebrae, with foreman for passage of basilar artery; and antlers. Mr. Latham stated that the coal had an average of 12 yards thickness, and was good and dense all through. It formed a complete basin, and the theory for its being found in such a position was that when the great internal eruption took place, and threw up the Rowley and Sedgley hills, the part of the coal field where the Wren's Nest now stood was bodily moved to where they then stood. In the centre of the basin the coal was from 35 ft. to 42 ft. thick, while the heathen and bottom coal and all the accompanying measures of ironstone, &c., were present. Three heavy shots were fired.—A hearty vote of thanks to Lord Dudley and his agent was unanimously passed.

PATENT SAFETY APPARATUS FOR PIT CAGES.

The want of an apparatus so unique as to embrace the prevention of overwinding, and also arresting the cage or falling load in case of breakage of rope has been long felt, and we now have to deal with an arrangement embodying these requirements so perfectly that we shall not hesitate to satisfactorily describe and recommend its general adoption.

Mr. F. Leonard, of Birmingham, has undertaken, as the patentee, the task of introducing to the notice of the mining community an arrangement of so ingenious and yet so simple a character as to undoubtedly meet with the utmost satisfaction and feelings of safety by all whom it is intended to benefit. One of Mr. Leonard's safety apparatus has been fixed to the cage of No. 30 pit, belonging to the Earl of Dudley, since July last year, and in September following it was put to the severest trial before Messrs. Fisher, Smith, Jeffries, Latham, Skidmore, and a great number of the leading mining engineers of South Staffordshire and Worcestershire.

The satisfactory results surprised all present; the cage was overwound twice with a dead load of more than two tons, but on coming into contact with the cross-head the collar slipped, the chains became detached, and the cage, to the astonishment of all present, did not drop an inch. The apparatus at that time was fitted underneath the bottom of the cage, but Mr. Leonard found that in the course of time it was, if so fitted, liable to be damaged by coming into contact with loose cobbles, &c., at the bottom of the shaft. He, therefore, resolved upon placing it in a more secure position, and consequently put it directly under the bonnet of the cage, where it is out of harm's way, and perfectly shielded from wind and weather. A few weeks ago it was again put to the test by overwinding with full loads, with the same striking results, the apparatus doing its work in splendid style, and with the greatest precision.

After the repeated tests and trials, and the unmistakable proof given of its thorough practical working, we should be wanting in our duty to the mining profession generally if we did not recommend Mr. F. Leonard's invention. The negligence of engine-tenders, and the thousand-and-one chances of accidents to ropes and machinery, call for the utilisation of some such an apparatus, and we are glad to find that inventions are creeping into the market that will mitigate to some considerable extent the chances of violent deaths to the coal winner and damage to the mineowner.

The apparatus has the double advantage of preventing overwinding, and also the cage from falling down the shaft in case of the rope breaking, at the same time being simple in construction and detail. We gladly describe the working of it to our readers. The safety apparatus consists, in the first place, of a detaching hook, which is composed of two wedge-shaped plates, and each of them fitted with eyes, to which the shackle of the rope and the ring of the cage are attached by means of D links. In working position the two wedges are placed together in opposite directions, forming a rectangular-shaped exterior, over which a strong collar is slipped and held in place by a copper metal pin passing through it and the wedges, when the whole weight of the cage is brought upon the hook, the tendency is for the wedges to part, but they are perfectly locked by the collar, and the greater the weight the tighter the lock, and the only relief can be when, in case of overwinding, the collar comes in contact with the cross-head on the pit frame, and is slipped down off the wedges, shearing the pin and permitting the rope to go over the pulley, and the cage to the bottom of the pit, if it were not for the arresting apparatus attached to the cage. This latter apparatus consists of two eccentric levers or cams, fitted into a sort of collar, which works on the wire guide ropes. The peripheries of the cams are grooved to fit the guide ropes and press them against the collar working round them in action. Attached to the back of

* "Nouveau Commentaire des Lois sur les Brevets d'Invention, suivi d'une instruction pratique aux Modèles d'Actes et Formules de Procédure." Par F. Malapert, docteur en droit, avocat à la Cour d'appel; avec la collaboration de Jules Forni, avocat à la Cour d'appel. Paris: Guillaumin et Cie, rue Richelieu.

* "Friction and Lubrication: Determinations of the Laws and Co-efficients of Friction by New Methods and with New Apparatus." By ROBERT H. THURSTON, M.A., C.E., Professor of Mechanical Engineering at the Stevens Institute of Technology, &c. London: Tribner and Co., Ludgate Hill.

each cam is a rod surrounded by a spiral spring, and this is kept in tension, at the same time holding back the cams from the guide ropes by means of chains running round small pulleys up to the cage chains. When the rope is detached in over-winding, or breaks, the chains are immediately relieved, and the springs force the cams forward, causing them to press the guide ropes against the collars. The friction also acts on the eccentric form of the cams, and the greater the weight the more force they exert upon the guides, so that the cage is firmly held. The apparatus costs about two-thirds of the price of any other in the market, and is applicable to either wire or wood guides. There is not a doubt about its finding its way amongst our colliery proprietors, since the elements of success are so great as to warrant a speedy sale. We understand Messrs. Johnson and Co., of Dudley, are the sole agents.

COLLIERY INSURANCE, AND COMPENSATION.

The subject of the insurance of the owners of collieries against liability for accidents, alluded to by the President of the North Staffordshire Institute of Mining and Mechanical Engineers, in his inaugural address in February, was revived by an interesting paper by Mr. R. Nelson Boyd, F.R.G.S., read at last week's meeting of the same society. He remarked that in the prosecution of so dangerous an occupation as coal mining numerous accidents must occur which no foresight or care could prevent. But he opined that these did not come within the scope of intended legislation, and must be provided for as they were at present. The point involved was to make the owners of works legally liable to workpeople for compensation in cases of accidents occurring at the works, and attributable to an act of negligence on the part of the owner or his representative. In order to meet the compensation arising out of accidents a system of insurance had been proposed, which, from the opinion expressed by Lord Justice Brett before a Committee of the House of Commons, would be admissible at law. There were two ways of attaining this object—one by levying a tax on the tonnage raised at each colliery; the other, by a payment per man employed. To his mind the latter would be the more equitable method to adopt, for these reasons—The risk would always be proportionate—all other things being equal—to the number of men employed. But in collieries where, owing to a judicious system of working and the proper application of machinery, a larger quantity of coal per man was raised, and therefore the risk reduced, the tax, if placed on the tonnage, would be greater than in collieries where the tonnage rate per man was lower. The best managed collieries would thus be found at a disadvantage, and would have to pay a sort of fine for improvements. This would be wrong in principle, and become an obstruction to improvement instead of encouraging the adoption of a better method of working and the introduction of machinery at a great outlay of capital.

Miners' lives, according to Mr. Nelson Boyd's calculation, are worth 2847. each cash, which is about 50 per cent. more than a good average nigger used to fetch in the United States. It appears that the collier begins work at 12 years old, and dies at 48 years, that the average age of working colliers living is 25 years, and their average wages 17. per week. Hence it must be assumed that colliers are cut off at that age by colliery casualties, and that there are 23 years of labour to be compensated. The average number killed in collieries are 1000 per annum, half of whom would be entitled to compensation. Mr. Boyd estimates that the colliers are not worth more than 10s. per week to their wives and families, so that the surviving relatives would be entitled to the present value of an annuity of 267. for 23 years at 4 per cent., or 2847. as stated. Assuming the proportion of non-fatal accidents to be 10 to 1 of the fatal accidents, there would be 5000 cases to be dealt with, which, according to the experience of friendly societies, would receive six-tenths of their wages, or 12s., for a term of five weeks, or (say), on the average, 37. compensation. This represented a further sum of 15,0007., or 9d. per man per year. The total tax on mine proprietors would, therefore, amount to about 8s. per man employed per annum, or 13d. per week, in case such a Bill as that proposed by the Government were to become law. He believed that the amount would in reality be much less, and he ventured to assume that 1d. per week per man would cover all liability.

With regard to the essential bases for the discussion, Mr. Boyd appears to agree with Mr. A. Macdonald, but whilst Mr. Macdonald estimates that 75 per cent. of the accidents are preventable by proper management, Mr. Boyd assumes 50 per cent. to be the figure. If then even Mr. Boyd's estimate be correct, it is evident that the employers guilty of permitting such mismanagement as leads to the unnecessary slaughter of 500 colliers per annum, and the injury of 5000 others ought to be punished in some way; and whatever may be the supposed opinion of Justice Brett, it is unlikely that he or any other judge would sanction in their courts any system of assurance, the object of which was to pay legal penalties for defendants. If any colliery accidents be avoidable by proper management (and this would really seem to be the case, since in some collieries accidents are the rule, and in others the exception, although the same seam is being worked) it is within the power of the colliery owner to secure that management by the careful selection and proper payment of officers, and if he neglects to protect himself by employing competent men, he is unquestionably culpable, and should be punished, hence the Member for Stafford was quite justified in saying that the working men themselves "asked for a Compensation Act that would have the effect of preventing the waste of life, so common in the mines of to-day. Everything should be done to aid the distressed who were suffering from the defect of the law. While he was aware that of the accidents in mines, on railways, and in the large industries of the country, one-half were caused by sheer recklessness and mismanagement, he would never be a party to legislating for charity, or asking the working men to support that which ought not to be created—ought never to have existed by the wholesale slaughter of human life." Taking any given year, it will be found that 75 per cent. of the collieries are free from fatal accidents, and taking a series of years it will be found that a large portion of the remaining 25 per cent. constantly recur in the accident lists, so that to ask the employers of 300,000 men who work in accident-free collieries to subscribe 8s. per year per man, or 120,0007. in all, for the benefit of the employers of the remaining 100,000 men who work in the bad and cheaply managed pits in which, as Mr. Macdonald puts it, the men are slaughtered, is unreasonable, even if it were not objectionable as discouraging improvements which would lessen the unnecessary sacrifice of human life.

In the course of the discussion which followed the reading of the paper the president (Mr. W. Y. Craig) remarked that what he would like to see carried out is a measure which would secure to the disabled the means of living comfortably during the period of his disability to work, and also the means of support to the bereaved in the event of a bread-winning death from accident. None of the bills before Parliament relating to compensation for accidents to workmen provide for this adequately, as their object is confined to those accidents only which arise from culpable neglect on the part of employers or their agents, and the larger class of injuries and death which arise from causes purely accidental are not taken into account. Mr. R. Stevenson briefly sketched a counter proposal, which he said required for its successful management a national confederation of all owners of collieries, and a national union of all workmen in collieries. He would call the confederation of owners capital, and of the union of workmen labour. Each should elect a board to form one assembly, with a president who should sit as umpire. The assembly should settle trade disputes and manage the insurance society. Taking 400,000 as the mining population, about one-fourth would be under 18 years of age. A national relief society should be established. Each man 18 years of age and upwards should pay 1d. a week, and every lad under 18 4d. a-week, which would amount to 14587., every colliery owner paying a similar tax, raising the total amount to 29167., Mr. Boyd having assumed that half the accidents were due to the owners and half to the workpeople. The total annual subscription would be 151,6327. Now, taking 10,000 as the proximate total number of non-fatal injuries per annum, and 37. as the estimated average compensation per head, that amounted to 30,0007. The fatal accidents averaged approximately 1000 per annum. But instead of paying a lump sum he would pay 12s. per week to the

widow so long as she did not re-marry, and where the deceased was not married his representatives would be entitled to 6s. per week up to the time when the man would have reached 50 years of age, when all allowance would cease. Half the above would be paid in respect of lads. The owner should be required to pay over and above the sum named 57. to the representative of any person killed as burial money. With regard to the opinion of Mr. A. Macdonald, M.P., as to the cause of accidents, he should like to quote the opinion of Mr. Knowles, M.P., on the subject. Mr. Knowles, in a letter to the Times, said—"I am not one of those who attribute all the accidents to workmen. On the contrary, I believe they compare favourably with the workmen of other classes, and are not careless; but so long as mines are worked, and under the best management, there will be liability to accident."

The paper was attentively listened to, and the discussion upon it was animated and practical, everyone present fully recognising the importance of the question raised, and being fully convinced that there should be ample compensation for lives sacrificed or injuries sustained in collieries when they are by any reasonable foresight preventable.

Original Correspondence.

GREYSTONE MINE.

SIR,—Considerable excitement has been occasioned in Launceston and its neighbourhood by the discovery of a new silver-lead lode in this mine, which is about two miles south of that town. A mineral surveyor has been down inspecting the mine, and to report on the property. I hear that he declared it to be the richest silver-lead that he ever met with. A miner of the locality says that it is worth 1087. per fathom. The lode is rich for silver. This discovery has stimulated speculators to take mining leases of the adjacent lands in all directions. The mine is the property of only a few (I believe two or three) gentlemen. I am glad that such a prize has turned up in these poor times to give employment to miners, who, for the want of it, have been emigrating in large numbers.

CORRESPONDENT.

MINING IN LLANARMON.

SIR,—The reply to the enquiry of your correspondent from North Wales as to the position of the flats in relation to the enclosing strata, I would call his attention to some letters of mine that appeared in the Journal during 1878, headed "The Flat Measures of Denbighshire," but in case he might experience some trouble in finding them, I will again traverse the same ground. By the flats we mean two parallel lead-producing deposits found in the millstone grit measures, termed respectively the upper and lower flat or lead measures, their strike being nearly north and south through the counties of Flintshire and Denbighshire. From the Fawngog Mines to Lead Era most of the shafts sunk have started from the chert measures, therefore I only offer the following section from the horizon down:—

	Fe.	Ft.
Chert	from 45 to 60	
Shale	" 45 " 60	
Sandstone, locally termed the "Great Sand" ..	" 45 " 60	
Hanging of upper flat or lead measures ..	" 30 " 35	
Upper flat or lead measure	" 3 " 60	
Sandstone heading or footwall	" 30 " 40	
Limestone	" 15 " 30	
Sandstone	" 15 " 30	
Bottom flat	" 3 " 60	

While in most cases the above may form an approximate section, covering a considerable extent of ground, yet from a variety of circumstances it must be subject to numerous modifications, and without a comprehensive knowledge of the strata throughout, in some instances it would appear altogether unanalogous. If agents, &c., of different mines were only to contribute to your Journal an accurate section of the mines under their control a reliable and useful section would soon be obtained.

The chert bed crops to surface at Fawngog, South Hafod, Brynhy-fryd, Jamaica, Truro, new road to East Pant-du Mine, in the road from Llanarmon to Tryddyn, near Grianhyd Wynne Mine, Lead Era, east of Llyn-cyfnw, and at mouth of adit. The shale—New road to East Pant-du, Llanarmon, new shaft, Llyn-cyfnw, forming the bottom of the lake, and at sundry other places. Sandstone is conspicuous in almost all these places. The hanging is represented by chert, clay, and shale, but generally chert—sometimes soft argillaceous sandstone. The flat's chief constituents are lime carbonates and fluete of lime, blacking a mineral aggregate, consisting chiefly of silica, alumina, iron of manganese, and magnesia, chert and clay, boulders of limestone, sandstone loose and compact—in fact, a homogeneous mass of the enclosing strata. The heading sandstone lithologically much resembles the great sand or upper grit, but it has some peculiarities distinguishing it from the other sand. Limestone, generally of a dark colour, sometimes found in boulders, and at other times in stratified beds. The bottom flat has a striking analogy to the upper, but by a close observance it can be easily identified. It rests upon the limestone, and represents nearly the base of the millstone grit measures; in some places, however, sand forms the heading.

The lead ore extracted from these measures is something extraordinary. I am sorry I am not prepared at present to furnish the statistics of this. These measures are comparatively virgin. From Rhydymwyn to Lead Era can be seen miles of unexplored ground that does not require a stretch of the imagination to believe that there exists sufficient wealth underneath to make the Mold and Llanarmon district again famous for its mineral wealth. I trust the time is not far distant when the lethargy that seems to have overtaken mining in general will have wholly disappeared, and that this locality, as well as others, will again be the scene of extensive action.

Nant Llanarmon, Mold, Sept 9.

J. A. EDE.

[For remainder of Original Correspondence see to-day's Supplement.]

NEW STEAM GENERATOR.

A novel construction of generator capable of vaporising liquids with great rapidity has been invented by Mr. ALFRED NOBEL, of Paris. The chief peculiarity of the generator is that it exposes a small bulk of the liquid to be vaporised to a large heat communicating surface. In its simplest form it consists of a coiled tube of copper, iron, steel, or other suitable material, heated outside, and through the core of which water is let in at one end, and escapes as steam at the other. The temperature of such steam under otherwise similar conditions depends on the quantity of water which is permitted to flow through the generator coil, and can be read off on a thermometer connected therewith. To avoid superfluous friction of the steam produced the bore of the coiled tubular generator is tapered outwards towards the exit end of the core. Thus for the first fifth part of the coil it may have only 3 millimetres inside diameter by 8 or 9 millimetres outside diameter, and increase by 1 millimetre for each following fifth, so as to have 7 millimetres inside diameter at the outlet.

Whilst friction is thus kept down the small bulk of water, which the inlet tube can hold, secures a great velocity of flow, whereby, as practice has proved, incrustation from time and impurities contained in the feed water is avoided. To prevent incrustation still more effectually a small steam or air injector is connected with the pipe letting in the feed water, which latter is thus violently agitated. Several of the coils may be combined, so as to produce any quantity of steam needed, and each coil may, without inconvenience, be made 50 or even 100 yards in length. The generator is placed in a suitable furnace, and is connected at the one end with a feeding pump, or other feeding contrivance, and at the other with a suitable condenser if used for distilling liquids, or with a steam-pipe furnished with a safety-valve, thermometer, and manometer, if intended to supply the place of a boiler for a steam-engine.

There being no store of water in a generator of this kind it is necessary, in order to avoid burning the coil tube, that it should continue to be fed with water for a certain time after the engine has

been set at rest. It is, therefore, better to make use of a steam-pump independent of the main engine, or what is technically called a donkey. When the fire is ignited below the coiled tube or tubes the water contained therein at starting becomes heated and is converted into steam, which sets the engine and feeding pump in motion. The latter by giving a constant supply of water will ensure the maintenance of a supply of steam. The thermometer indicates how far it is superheated, and the manometer shows its pressure. To modify both at will the engineer has only to regulate the inflow of feed water, the draft valve in the chimney, and the admissions of waste steam to increase the draft. It is evident that the form of the generator may be greatly varied without varying the main feature, which consists in presenting to the feed water (or feeding liquid) such a large heating surface as to convert it into steam (or vapour) as fast as it can flow through the generator. The main advantages of the generator consist in its perfect immunity from danger of explosion; in the possibility of security utilising any amount of steam pressure and expansion; in cheapness of construction, and in being able to get up steam without waste of time.

THE REVIVAL IN THE IRON TRADE.—Messrs. Crawshaw and Sons recommenced operations on Wednesday at their Perseverance Iron Mine, near Cinderford. This is the second mine reopened by the firm during the present week, and they are rapidly reducing their stocks of pig-iron. Prospects in the Forest of Dean are much brighter than they have been for a long time.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week prices have maintained an upward tendency under the influence of finer weather, an easier money market, and more favourable trade prospects, in connection with the revival in the iron and steel departments, but business has been somewhat restricted as usual at this holiday season, as well as by the fortnightly settlement. Transactions now entered into are for settlement September 30. The chief feature in the Board of Trade Returns for the month of August is the increased demand for British exports on American account, and it is believed both in that country and here that the improvement will likely become as important in other branches of trade as it already is in the iron and steel industries. It is, therefore, pretty certain that all metals will soon rise, but the greatest rise must be in iron and tin.

In shares of coal and iron companies, the movements for the week are almost all upwards. Monkland (preference) shares have advanced 15s. per share, Chillingham, also Lochre and Caplehead, each 5s. Omoia and Cleland 2s. 3d., Benhar, Clyde, and Ebbw Vale each 2s. 6d., and Marbella 1s., but Monkland (ordinary) shares are 2s. lower. Benhar touched 30s. 6d., but have since come back a little. Charles Cammell and Company, also Shotts, are both in demand, but no sellers. Steel Company of Canada offered. The heavy rise in Monkland (preference) shares is to some extent due to their carrying back interest. The revival which has taken place in the iron and steel trades of this country in sympathy with the improvement in the United States continues to be well maintained. It is very satisfactory to hear that there is a rather active demand at New York for Scotch pig-iron, while the Lanarkshire and Ayrshire ironmasters have resolved to blow out one-third of the furnaces now in operation. When the demand is seen to be increasing in this manner, and steps are being taken to lessen the supply, it is a certainty that prices will rise. The adjourned meeting of Silkestone and Dodsworth will be held on October 22.

At the meeting of the Staveley Company, on Sept. 22, dividends of 17. 10s. will be recommended on A and C shares, and 5s. on B and D shares, carrying over the sum of 28,1967. At this time last year the dividends were 27. and 6s. 8d. respectively. Muntz's Metal is to be 7½ per cent., against 10 per cent. last year. The report of the Consort Company for the year ended June 30 shows the profits were 55,9857. and a dividend of 10s. per share is recommended, making with the interim dividend already paid 15s. per share for the year, with a balance of 3071. Bilbair Iron 6 per cent. pref. are 25. Bolckow, Vaughan, A. 5s. ditto, R. 2s. to 29½. Brown, Bayley, and Dixon, 20½ ds. Cardiff and Swansea, 15s. Chillingham, 50s. to 60s. Ebbw Vale, 75s. to 77s. 6d. Great Western, 30s. John Brown and Company, 34 ds. John Bagnall and Sons, 20s. Marbella, 30s. 6d. to 31s. 6d. Mersey, 70s. ds. Monkland pref., 65s. Newport Abercrombie, 5s. Omoia and Cleland, 14s. to 16s. Pelsall, 11½ ds. Rhymney, 18. Scottish Australian, 35s. to 40s. Sandwell, 12½. Shepherdsbridge, 50½ ds. South Wales, 45s. Tredegar, B. 16; West Cumberland, 14½ ds. and lead companies there has been a general improvement. Rio Tinto Five per Cents. have advanced 3½ each, Tharsis old and new shares both 17. 11s. 3d., Rio Tinto shares and Seven per Cents. both 7s. 6d., and Panulillo, 5s. The rise in Rio Tinto has been assisted by the promoting of the Metallic Sulphides Reduction (Hollway's Patent) Company (Limited), which will, it is expected, increase their profits greatly. This new company promises to be highly successful, and has the support of the majority of the metallurgical world. The only thing that keeps the price of copper at its present low point is the sales being made to provide funds for carrying on the war in Chili and Peru. As the production is at the same time arrested it is evident that a great rise must occur shortly, or when these sales are completed. The Cape Company has declared a dividend of 10s. per share payable Sept. 29, but at this time last year they were paying 17s. 6d. Their last sale realised 10s. 7d. per unit. Tharsis old shares have steadily advanced all the week, and touched 23½. Alamillos are at 25s. Canadian, 6s. New Quebrada, 47s. 6d. Panulillo, 30s. to 40s. Rio Tinto Five per Cent., 73s. Yorke Peninsula, 2s. to 4s.; and ditto, pref., 7s. 6d. to 12s. 6d.

In shares of home mines, more business doing. Glasgow Caradon estate at 19s. 6d. to 20s. The next sale of this company, computed 170 tons copper ore in September 18 compares with 130 tons last month. 200 tons in September, 18, and 185 tons in September, 1877. While the sales in the same month for some preceding years have been from 255 to 260 tons. South Crofty has risen fully 15s. per share since last week, owing to a fine discovery. There is no doubt it is East Pool rich lode that they have met with. A meeting of the Bampfylde Company is to be held at the mines near North Molton, Devon, on September 16, and the meeting of the new company—the North Molton Mining Company (Limited)—at Liverpool on September 19. West Chiverton has sold 1000 tons of the blends which was unsaleable before the recent rise at 22. per ton. This will make the finances of the mine more easy, and no doubt it is a good speculation, although East Chiverton would seem to have all the chances first. Tin is steady at the late advance, and prospects for Cornish mine shares have not been so good for the past four years. At the next meeting of North Bury a dividend of 5s. per share is expected. Asherton, 12s. 6d. Bedford United, 4s. Carn Brea, 30. Cook's Kitchen, 40s. Derwent, 5s. to 15s. Devon Consols, 40s. Dolcoath, 30. East Caradon, 10s. East Lovell, 35s. East Pool, 14½. East Van, 20s. Great Laxey, 16½. Herodsfoot, 50s. Hingston Down, 5s. Killbuck, 3s. Leadhills, 45s. Marke Valley, 12s. 6d. Mellanear, 70s. Minera, 10. Phoenix United, 20s. Red Rock, 5s. South Caradon, 17½. South Condurrow, 11½. South Frances, 8½. Tankerville, 6½. Tincroft, 10. Van, 15 to 18. West Asherton, 18s. 3d. West Bassett, 5½. West Frances, 5s. West Mary Ann, 7s. 6d. West Pateley Bridge, 45s. West Wheat Tolu, 2s. West Beton, 18. Wheel Crebhor, 5½. Wheel Basset, 25s. Wheel Jane, 50s. to 60s. Wheel Kitty (St. Agnes), 5s. to 10s. Wheel Peavor, 11½. Wheel Uny, 2s. to 4s.

In shares of gold and silver mines Richmond declined to 7½, but have recovered to 8½. 1s. 3d. This week's run is 826,000. The Pestarena United Gold returns for August are in all 566 ozs., and the average yield 15 dwts. 16 grs. The produce of Don Pedro for August is 2550 ozs. Colorado United, 30s.; Eberhardt, 37s. 6d.; Exchequer, 2s. 6d. to 5s.; Flagstaff, 3s. 9d. to 5s. 3d.; Frontino, 45s.; I. X. L., 2s. 6d. to 5s.; Javali, 5s. to 7s.; London and California, 11s. 3d. to 15s.; Port Phillip, 2s. to 10s.; Pestarena, 2s. 6d. to 5s.; ditto 12½ per cent. (pref.), 15s. to 20s.; and Sierra Buttes, 37s. 6d.

In shares of oil companies Broxburn are 2s. 6d. higher, but Young's Paraffin are 10s. lower, and Uphall 8s. 9d. Young's Paraffin fell to 12½, but are now steadier. New Patent Candle are at 21½; Millbay Soap, 27; Price's Patent Candle, 9s. and Victoria Soap, 16½.

In shares of miscellaneous companies no important alteration to observe. London and Glasgow Engineerings are now quoted ex div. Birmingham and Midland Counties Val de Travers are at 10s.; Earle's Shipbuilding, 25 ds.; Milner's Safe, 8; Native Gunno, 50s.; and Palmer's Shipbuilding, B. 15½ ds. Prices of wagon companies shares are—Birmingham, 12½; Bristol and South Wales, 6½; Gloucester, 6; Metropolitan, 40s. prem.; Midland, 8½; Railway Carriage, 70s.; Scottish, 8 to 9; and Swansea, 30s. In chemical companies shares there is not much doing. Lawe's (pref.) wanted. The meeting of Odam's Company is to be on Oct. 1. Langdale's are 60s. to 80s.; Lawe's, 7 to 7½; Newcastle, 42s. 6d.; and Western Counties, 12.

The following calculations show the yield per cent. on money invested at present prices in the shares named, based upon last year's average dividends being maintained:—Antrim Iron Ore, A. would yield 6½; ditto, B. 7. Oakbank Oil, 10. Scottish Australian Mining, 8½. Scottish Wagon, 5½. Tharsis Sulphur and Copper, 6½; ditto (new), 6½. Uphall Oil, 6½. United States Rolling Stock, 6. Val de Travers Paving, 7½. Young's Paraffin, 8½.

SHOTT'S IRON COMPANY.—The manager of the company reports that all the works and working plant are in a thoroughly efficient state, and when No. 6 furnace Shotts shall have been raised to the same height as the others, including all the necessary arrangements for utilising all the waste gases of that furnace (which can be carried out at an expenditure not exceeding 15007.), Shott's works will have on a complete transformation, the benefit of which will continue to be felt in the future. The mineral fields are being rapidly developed and capable of great extension. House accommodation for workmen is still in demand. As regards pig-iron or manufactured castings, the quality of this company's produce will compare favourably with any preceding year, no attempt having ever been made to diminish cost at the expense of quality of produce.

On Contango day (Tuesday) the following were the rates of continuation current:—Contango—1d. even, 1½d. on Benhar Coal; 2d. on Clyde Coal; 1½d. 1d. on Glasgow Caradon Mine; 1d. on Huntingdon Copper; 1d., 2d., even 3d., Marbella Iron Ore; 2d., 2½d. on Monkland Iron; 3d. on Richmond Mine; 2s. 6d., 2s. 3d., 1s. 9d. on Tharsis Sulphur; 2d. on Oakbank Oil; and 3d. on Young's Paraffin. Barwardation—3d. on Uphall Oil. On comparing the making-up prices fixed to-day for the following shares with those at last settlement for the same shares, the variations thus shown to have occurred during the past account are: Tharsis (107. paid) have advanced 17. 6s. 3d. per share; ditto (71. paid) 23s. 9d.; Rio Tinto shares, 20s.; Richmond, 15s.; Clyde Coal, 14s. 6d.; Benhar and Marbella, each 4s.; and Broxburn Oil, 2s. 6d. On the

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Ten years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the *Journal* on the Clementina Mine.

In the year 1843, when mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to four o'clock.

They also buy and sell shares for immediate cash, for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charge for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in on the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

That astute and elaborate writer the agent of Tankerville, Capt. Waters, reminded us in his last report of that property, that in regard to successful mines, as in other things, "history repeats itself." He said, "Seasons come in cycles, history in epochs, which are ever and anon repeated," &c.

This poetical way of putting the matter set us thinking what a practical illustration of it there is at the present moment in the market. Up to the year 1859 there was a mine in 6144 shares, which had worn out the patience of many of its shareholders. So had Crebor in 1879. East Caradon, to which we refer, adjoined a very rich mine; so does Crebor. East Caradon was offered in the market for a few pence; we bought them just before the lode was cut at 1s. 6d. per share. So we did Crebors. When the counter lode was cut at East Caradon shares rose, and the "bears" became active. So they also became in Crebor. At East Caradon "bulls" and "bears" sent their agents weekly to inspect the mine, and all sorts of reports were circulated to frighten people out of their shares. Thus has it also been in Crebor. The agent of East Caradon, Capt. Seccombe, was a good practical miner, and an honest man. So is Capt. Andrews, of Wheal Crebor. Capt. Seccombe kept us regularly posted up as regarded the true position of his mine every week. So does Capt. Andrews. We gave the public the benefit of all the information thus obtained in 1859 in the columns of the *Mining Journal* week by week. So we have as regards Wheal Crebor. The "bulls" of East Caradon applauded, and the "bears" fearfully reviled us. So they have in Crebor in 1879. Thus far has history repeated itself, our readers will admit, in a very extraordinary manner. And it is more than probable that one gentleman at least will read these remarks to whom we sold shares in East Caradon at 1s. 6d., and afterwards offered him 50s. per share for the same shares, which he refused.

The price of copper is not so good now as it was then, but at no time during the brilliant career of East Caradon was the lode so rich (20 tons per fathom) as the new lode now is in Crebor; and if the price of ore is less, the cost of working Crebor by water-power is one-fourth less than it was by steam at East Caradon.

East Caradon, to which we clung against all evil reports, as we have to Crebor, paid its first dividend in 1860—Crebor will "repeat this part of history" in 1880. In 1861 East Caradon paid 8448l. profit; in 1862, 20,736l. profit; in 1863, 19,555l. 4s.—thus in three years from the discovery paying 83,546l., or 13l. 12s. per share on the 1s. 6d. shares. It will be too much to say that with the present price of copper Crebor will repeat this, but this we do say, and fearlessly, that in 1880 Crebor will pay as good dividends and a higher percentage on present price of shares than any tin, copper, or lead mine in Devon or Cornwall. It is also a remarkable thing, we may add, that the discovery at East Caradon was on a counter lode—that is, a lode running in a contrary direction to the usual run of copper lodes east and west. So also is the new lode at Crebor, a lode never seen or heard of in the mine till a few weeks ago; and in our opinion it has been met with just at the junction with the old lode in the 120, where it is worth 20 tons of copper ore per fathom, and like, as the agent states, a "quarry" of ore. Nearly 40 fms. further from this, in the 108, the new counter is worth 70l. per fathom, and in the 48 a cross-cut is being put out to intersect it, and if found rich there, then nothing ever found in East Caradon will equal Wheal Crebor, though the former rose to 55l. per share, or 350,000l. for the mine.

South Frances bottom level, the 215 west, is now the richest ever seen in the mine, and worth 1 ton of tin per fathom.

Aberllyn sold on Thursday 50 tons of blende for 164l. 8s. 6d. It was divided into three parcels to test the best mode of mixing and dressing it. The best parcel brought 3l. 12s. per ton; second, 3l. 5s.; third, 2l. 13s. 6d., all delivered at Bettws-y-Coed. For delivery at Swansea upwards of 4l. per ton was offered for the best, 3l. 15s. 6d. for the second, and 3l. 6s. for the third quality. This sale stamps the value of the blende, and we hope now that good quantities will be sold monthly.

We cannot advise "X" one way or the other.

BASSEY CONSOLS SILVER MINE.—A correspondent wishes to know when this mine ceased working.

We have lately received a great many letters from correspondents in different parts of California—two again this week, giving us long reports and particulars of mines which they recommend and offer us for sale. It is impossible that we can reply to all these lengthy communications, and we may add here that we do not go into these American mines.

The Don Pedro directors have issued a circular announcing that applications for the debentures have been made to the extent of 7140l. The produce for August is 2550 oits., that is about 320 ozs. of gold.

The sink below No. 5 adit at D'Eresby Mountain has not yet been cleared to the bottom, but good lead is seen as the clearing proceeds.

At D'Eresby Consols a branch chiefly of spar and mundic has been cut, and the lode cannot now be far off. When cut into we apprehend it will let down a sea of water, and enable the men to go down into the old workings on the lode, as well as prove its value below them.

Welch United, we understand, is now in 20,000 shares of 1l. each; 10,000 of these are given for the mine, free of debt. Thus after the

debts are paid, what remains of the 10,000 shares will be divided among the old shareholders *pro rata*.

SATURDAY, SEPT. 6.—Market steady. Wheal Crebor and South Crofty in demand at advanced prices. Crebor, 4½ to 5; South Crofty, 20 to 22½; West Tolgus, 25 to 27½; Dolcoath, 31 to 33; South Frances, 7½ to 8½; Tincroft, 10 to 10½; Peevor, 10½ to 11½; Van, 15 to 16; Herodsfoot, 2½ to 3½; Aberllyn, 10 to 12; Mellanear, 3½ to 3¾; East Pool, 14 to 15; Leadhills, 2½ to 2¾; Parys Copper Company, 10s. to 12s.

MONDAY, SEPT. 8.—Market for tin shares weak. Wheal Crebor advanced to 5l., buyers. Aberllyn, 10 to 12; Carn Brea, 28 to 30; Cook's Kitchen, 1½ to 2; Devon Great Consols, 1½ to 1¾; Dolcoath, 29 to 31; East Pool, 14 to 15; East Van, ¾ to 1¼; Glenroy, 7s. 6d. to 10s.; Great Laxey, 16 to 17; Herodsfoot, 2½ to 3½; Leadhills, 2 to 2¼; Mellanear, 3½ to 3¾; Marke Valley, 10s. to 15s.; Morfa Du, 15s. to 17s.; Parys Copper Company, 10s. to 12s.; Roman Gravel, 8½ to 8¾; South Condurow, 11½ to 12; South Crofty, 20 to 22; South Frances, 7½ to 8½; Tankerville, 3 to 3½; Tincroft, 10 to 10½; Van, 15 to 16; West Basset, 5 to 5½; West Chiverton, 1½ to 2½; West Frances, 4½ to 5½; West Tolgus, 25 to 27½; Agar, 3½ to 4; Crebor, 5 to 5½; Grenville, 4 to 4½; Peevor, 11 to 11½; Cape Copper, 25 to 30; Don Pedro, 10s. to 12s. 6d.; Frontino, 2½ to 2¾; Richmond, 7½ to 8½.

TUESDAY, SEPT. 9.—Market tolerably active, and with the exception of a demand for Wheal Crebor shares at 5½ to 5¾, there is not much alteration in yesterday's prices.

WEDNESDAY, SEPT. 10.—Market for tin shares continues inactive. Wheal Crebor shares are again in good demand, and shares very scarce. Dolcoath, 29 to 31; East Pool, 14½ to 14¾; South Condurow, 11½ to 12; South Frances, 8 to 8½; Tincroft, 9½ to 10; Great Laxey, 16 to 17; Van, 15 to 16; Roman Gravel, 8½ to 8¾; Crebor, 5½ to 5¾; South Tolgus, 25 to 27; Devon Great Consols, 1½ to 2; West Chiverton, 2 to 2½; Tankerville, 2½ to 3½; Peevor, 11 to 11½; Don Pedro, 12s. to 14s.; Cape Copper, 29 to 30.

THURSDAY, SEPT. 11.—The rise in the tin standard has caused an advance in tin stocks, and shares are very firm. Wheal Crebor advanced to 5l., buyers. Carn Brea, 31 to 33; Dolcoath, 31 to 33; East Pool, 14 to 14½; South Condurow, 12 to 12½; South Frances, 8½ to 9; Tincroft, 10 to 11; West Basset, 5 to 5½; West Frances, 5 to 5½; Peevor, 11½ to 12; Grenville, 4 to 4½; Crebor, 6 to 6½; Great Laxey, 15½ to 16½; Van, 15 to 16; Roman Gravel, 8½ to 8¾; West Tolgus, 25 to 27; West Chiverton, 2 to 2½; Mellanear, 3½ to 3¾; Leadhills, 2 to 2½; East Caradon, 8s. to 10s.; Glenroy, 7s. 6d. to 12s. 6d.; Parys Copper, 10s. to 12s.; Don Pedro, 12s. 6d. to 15s.; Aberllyn, 10 to 12.

FRIDAY, SEPT. 12.—Settling-day, and not much business doing. Tin shares firm. Crebor and East Caradon in demand. Crebor, 6¼ to 6½; East Caradon, 20s. to 30s.; Carn Brea, 31 to 33; East Pool, 14½ to 15½; South Frances, 8½ to 9; Dolcoath, 31 to 33; Tincroft, 10 to 10½; Peevor, 11½ to 12½; Grenville, 4½ to 5; Herodsfoot, 2½ to 3½; Aberllyn, 10 to 12; Devon Great Consols, 1½ to 2; Mellanear, 3½ to 3¾; Cape Copper, 28 to 29; Don Pedro, 12s. 6d. to 15s.; Panullicello Copper, 1½ to 2; Richmond, 8 to 8½; Santa Barbara, 32s. 6d. to 37s. 6d.

MR. WILLIAM H. H. WATSON, who has made a special recommendation of WHEEL CREBOR SHARES since they were 5s. each, has just returned from an underground inspection of the Mine, and will forward a full report of present and future prospects, financial position, and probable date of dividends, for 10s. 6d., to be allowed again in case of business.

Address: W. H. H. WATSON, 1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON, E.C.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

HYDRAULIC MARINE SALVAGE COMPANY (Limited).—Capital 50,000l., in shares of 10l. To acquire and utilise certain patents for the purposes of the company. The subscribers (who take one share each) are—T. H. Smellie, 85, Gracechurch-street; R. Richards, Liverpool; J. C. A. Schmitz, Dalston; J. H. Harper, 28, St. George's-road; A. Scott, Croydon; H. Skinner, Gravesend; C. W. H. Dowling, 3, Storey's Gate.

WILSON AND COMPANY (Limited).—Capital 6000l., in shares of 100l. To carry on at Frome the business of brewers' engineers and vat makers. The subscribers are—E. Baily, Frome, 15; G. H. Knight, Westbury, 15; S. Anderson, Westbury, 5; G. Wilson, Frome, brewers' engineer, 5; F. Pratten, Frome, 5; S. Taylor, Birmingham, 5; C. Baily, Frome, 5; T. Simpson, Frome, 5.

THE FARLEY SHOE COMPANY (Limited).—Capital 10,000l., in shares of 5l. To acquire the lease, goodwill, &c., at Farley and Liverpool of a shoe business, and to carry on same. The subscribers (who take one share each) are—J. Hacket, Liverpool; G. H. Barker, Liverpool; H. B. Jagger, Liverpool; G. Hughes, Liverpool; B. Jagger, Liverpool; R. H. Robinson, Liverpool; R. Blevin, Liverpool.

THE EAST FLORIDA SILVER-LEAD MINING COMPANY.—Capital 30,000l., in shares of 5l. To search for, lease, or otherwise own mines, situate in Gorgora parish, Gwynedd, Upper Cardiganshire, and work any lodes therein obtained, according to an agreement made between Capt. J. Williams and D. L. Lloyd, on the one part, and the company on the other, by which the above-mentioned property is disposed for 12,000l., in fully paid-up shares. The subscribers (who take one share each) are—T. Paul, 49, Bedford-street, broker; J. M. Pinwill, 5, Clifford-road, accountant; E. Miller, 3, Guildhall Chambers, accountant; T. Cannon, Peckham, journalist; J. Cannys, St. Day, Cornwall, accountant; W. Weller, 24, Lacey-street, merchant; F. Miles, 2, Osborne-road, commission agent.

GREY'S BREWERY COMPANY (Limited).—Capital 60,000l. in shares of 5l. To purchase or otherwise acquire the brewery at Henley-on-Thames, and to carry on the business. The subscribers (who take one share each) are—W. H. Harrison, 16, St. Swithin's-lane; C. Russell, Peckham; W. E. Duncan, 1, Swithin's-lane; H. C. Prance, Forest Hill; H. H. Gethen, 7, Warrford-court; F. E. Powell, 11, Warrford-court; C. D. Lubbock, 34, Thomas-street.

THE EAST PANT DU LEAD MINING COMPANY (Limited).—Capital 4800l., in shares of 5l. To purchase and acquire the mining property in Flintshire called the East Pant Du Lead Mine. To acquire any other mines and mining properties for the purpose of carrying on the business of mining in all its branches. The price of the above-named property is 3600l. in fully paid-up shares. The purchase of plant and other appliances necessary for the purposes of the company. The subscribers are—W. E. Turner, Liverpool, merchant, 24; E. Leicester, Liverpool, merchant, 21; J. Ashworth, Manchester, surveyor, 27; F. Green, Belfast, merchant, 48; J. Malcolmson, Belfast, merchant, 15; G. Malcolmson, Belfast, merchant, 15; H. Bell, Belfast, merchant, 30; C. Elcock, Belfast, accountant, 12.

THE GROUND RENTS AND FREEHOLD LAND TRUST (Limited).—Capital 100,000l., in shares of 5l. To purchase lands in the United Kingdom or abroad, to deal in the same, and carry on the business of "brick and tile, &c., manufacturers. The subscribers (who take one share each) are—A. J. Dobson, London; E. O. Fergusson, Westminster Chambers; C. Griffin, Shepherd's Bush; A. Mason, 186, High Holborn; T. Lund, 24, Martin's-lane; W. Whieldon, 84, Cannon-street; E. A. Harrison, 28, Budge-row.

THE COUNTERTHORPE BRICK AND TILE COMPANY (Limited).—Capital 20,000l., in shares of 5l. To carry on the trade of brick and tile manufacturers, and to acquire the business, with all belongings, of W. H. Townsend, near Leicester. The subscribers (who take one share each) are—W. H. Townsend, Leicester; W. E. Hickling, Leicester; G. Gibbons, Leicester; G. Harrison, Leicester; W. Jefferson, Leicester; W. Crisp, Nottingham; E. Bland, Leicester.

UNITED SERVICE CO-OPERATIVE TEA COMPANY (Limited).—Capital 5000l., in shares of 1l. The sale of pure teas from the lowest to the highest grades at lowest prices. The subscribers are—R. F. Stewart, 59, Mark-lane, 3; W. B. Neale, 16, Royal Crescent, 10; E. E. Waters, Worcester Park, 5; E. Mumford, 27, Melbourne-road, 3; F. Stephen, 178, Kensington Park-road, 2; W. H. Stephens, 30, Bedford-row, 1; P. K. Langdale, 30, Bedford-row, 1.

THE GLANVIAFON IRON AND TIN-PLATE COMPANY (Limited).—Capital 20,000l., in shares of 100l. To purchase or otherwise acquire coal and tin works, ironworks, tin-plate works, charcoal works, &c., situate in Clydach, Llangyfelach, Glamorganshire, and carrying on the business of smelting, &c. The subscribers (who take one share each) are—B. Jones, Flammertyd; J. B. Jones, Clydach; J. H. Davies, Swansea; J. Jenkins, Glass, Glamorganshire; L. Evans, Hay, Brecon; R. Smith, Clydach; C. Evans, Clydach.

THE WEST RIDING TELEPHONE EXCHANGE COMPANY (Limited).—Capital 15,000l., in shares of 5l. To establish telephone exchanges in Halifax, Leeds, and other places. The subscribers are—J. H. Whatcoat, Halifax, 3; M. H. Smith, Halifax, 3; J. Allen, Lightcliffe, 3; Chas. Bath, Halifax, 1; A. H. Hill, Halifax, 1; R. Wines, Halifax, 1; A. Ramsden, Kingston, 3.

THE TRAMWAY TRACTION COMPANY (Limited).—Capital 100,000l.,

in shares of 10l. To provide motive-power by steam or otherwise to be used on railways, tramways, or in the working of collieries, mines, and for manufacturing purposes. The subscribers (who take one share each) are—T. M. Mackay, 1, Leadenhall-street; J. M. Gillies, Thatched House Club, S.W.; W. R. Bacon, 1, Great Winchester-street Buildings; T. J. Selby, 10, Finborough-road; H. W. Brooks, 161, Brecknock-road; T. W. Perry, 27, Foulden-road; E. Philpot, 7, Benlap-road.

Mining Correspondence.

BRITISH MINES.

ABERLlyn.—J. Roberts, Sept. 10: During the past month we have driven in No. 2 cross-cut about 2 fathoms; the ground looks very promising for making lead when we intersect the lode. This is now being driven by two men, at 7l. per fathom. The winze in the bottom of No. 2, on the shale lode, has been sunk over 2 fathoms, and has yielded about 4 tons of blende; the lode is not quite so good as it has been, but it seems to be improving these last three or four days. This is being sunk by two men, at 3l. per fathom. Over this winze in the roof we have set a stope to two men, at 3l. per fathom; the lode is worth for blende 3 tons per fathom. We have set two stopes on the large lode, to eight men. No. 1 stope, south of the winze from No. 1 adit, at 4l. per fathom. No. 2 stope, in the north end of this winze, at 3l. 10s. per fathom; the lode here is looking just as it was when we drove through it. In the deep adit we have raised in the rise on the shale about 2½ fathoms. The shale lode contains good branches and patches of blende; this is now being worked by two men, at 3l. 5s. per fathom. In the valley cross-cut we have made a level through the gravel fallen down from the side of the mountain, and have got on the hard lode, which is mixed up with strong faces of blende. The dressing is now being carried on regularly, and the machinery works well.

BEDFORD UNITED.—R. Goldworthy, Sept. 11: In the 138 east there is a very strong lode; it is 4 ft. wide, composed of capel, quartz, mundic, and copper ore, and worth for the latter 3l. per fathom. The lode in the 127 still maintains its size and value—3½ ft. wide, and worth 9l. 10s. per fathom. The stopes in the back of these levels are improved, the average value being 9l. per fathom. The tributaries are, I think, making fair wages, and if the standard continues to advance we shall be able to set more ground for tribute and stoping, and thereby make increased returns. The prospects of the mine are very encouraging.

BETTS-Y-COED.—Charles J. Sims, Sept. 11: I am pleased to be able to report a considerable improvement in the western shaft. We are now down 10 fms. 3 ft. below the 20, and the lode for the last few fathoms has greatly altered. The lode is 5 ft. wide—a very kindly-looking lode indeed, containing a good deal of carbonate of lime, and is worth for lead ore fully 1 ton per fathom. We had the misfortune to break the windrope last week, but as we are deep enough for the 30 we have commenced driving west on the course of the lode, and shall resume sinking as soon as the breakage is repaired. The lode is looking its best on the western side of the shaft, and as there has never been any drainage west it will be seen that this is a very important point. Allen's stope in the back of the deep adit level is worth 10 cwt. of lead ore per fathom. Mallet's stope in the back of the shallow adit is worth 10 cwt. of lead ore per fathom. Hughes's stope in the back of the shallow adit is worth 15 cwt. of lead ore per fathom. We have plenty of water for pumping, and the machinery is working well. We hope to start the new crusher next week, and shall soon have another pile to smelt. Our last sale was on August 30, when we sold 21 tons at 9l. 9s. 6d. per ton.

BLAEN CAELAN UNITED.—Jonathan Pell, Sept. 11: There is nothing new to report—all is progressing satisfactorily both at surface and underground. A large feed of water is issuing from forebreast of the cross-cut to intersect south lode, and some signs of lode are apparent; but we have, I think, 2 fathoms more to drive before we reach the lode.

BLUE HILLS.—S. Bennetts, P. Vian, Sept. 6: The lode in the shaft below the 30 is without much alteration. In the 30 end, east of the shaft, it is 2½ ft. wide, producing some low quality tin stuff. The winze below the 30, west of the shaft, is worth 8l. to 9l. per fathom. The two stopes are worth 7l. and 10l. per fathom respectively.

BODIDRIS.—H. Hotchkiss, Sept. 6: The 60 east, on Maes-y-pwll lode, is with out material change to notice; lode very promising. In the bottom driving west from new shaft the lode is becoming firmer, with a rib of lead ore 2 in. wide for the full height of the driving, besides solid lumps in the loose ground. The top driving west I have thought advisable to stop for a few days, to allow the ground around the shaft to settle a little, and have put the men to the others to drive east on the lode, where an angle of 120° is being run in to look well. There is one solid rib of lead ore 4 in. wide all up the end, in addition to that in the loose ground. I am pleased to say that we have succeeded in stopping the ground from running before doing any damage to the shaft. In the roof of the 45 driving the character of the rock is somewhat changed, becoming darker, and the beds are dipping more northward. This is a good indication of nearing the lode.

BWLCH UNITED.—N. Bray, Sept. 9: The winze is communicated to the rise, and the men are now engaged in clearing their stuff and some old stuff in the level to the east of the rise at the 70 previous to driving the same. The shaftmen will soon be down to the required depth for this sink, when they will commence cutting large quantities of plat for the shaft.

CARON.—John Kitto, Sept. 6: There has been no further improvement in the mine since the date of my last report, and at present the 22 fm. level forebreast is poor, but I am of opinion that the main producing part of the lode is standing off to the south of the level, and our object in driving straight ahead is to communicate with the winze which is being sunk below the 10 as quickly as possible, and when this is effected, and good ventilation secured, we shall at once proceed to prove the lode; but it would not be wise, in my opinion, to spend time and money in opening out upon the lode until the communication referred to has been first made. The machinery is all in excellent working condition, and satisfactory progress is being made in the development of the mine.

CLEMENTINA.—John Roberts, William Sandoe, Sept. 10: We are making good progress in driving the end north at the bottom level. The lode is looking very promising indeed. There is a nice branch of lead on the footwall, and the water that was falling in torrents from the roof is now issuing up from the bottom. The south end is yet without any change, the ground rather spare for driving. At surface the work at the roadside shaft is getting near a close. We shall start the pump at the end of this week or the beginning of the next.

COMBARTIN.—J. Cooper, Sept. 11: There is no change to notice in the mine since our report of last Saturday.

CROOK BURN.—W. Vipond, Sept. 5: The men have got grey beds in one end of the shaft and the hazel in the other. This is owing to the dip of the sills in the length of the shaft. The grey beds are under the hazel, and the shaft will soon be all in this unless they come upon some other sill soon. They have been busy with the tramway, and I think it will be about laid down to-day. All is ready for the masons to commence with the end wall of stope.

CWM PRYD UNITED.—A. Francis: During the last two months a railroad has been laid through the deep adit level from its mouth to the junction of the main, the south, and Gelli lodes, and the men have been driving the lode for the last 30 fathoms having been driven on a branch, and out of the proper direction of the three veins named. In stripping down the south side of the adit, on the main lode, we have a course of silver-lead ore that will yield upwards of 30 cwt. per fathom, and this is being broken down for 2l. per cubic fathom; and No. 2 adit, which is 18 fathoms over the deep adit, having been driven more than 50 fathoms in advance of the deep adit forebreast through a very rich course of ore, leaves no doubt we shall pass through the same length of ore now discovered in the deep adit before us. We have also cleared through old miners' workings into good ore stoping ground, which is the western portion of the course of the deep adit in virgin ground. There is already ore ground discovered that will bear for some years to extract, which will work at the present prices, so as to leave one-half of its value in profits, and an outlay of 1000l. is ample for the erection of crushing and dressing machinery, which will be worked by the River Rhedol, which affords a most abundant supply at every season of the year. In less than six months this will be accomplished, and the mine brought into a permanent state of profits.

CWMYSTWTH.—Sept. 10: In Gill's lower level the water has not abated, therefore we have suspended the driving of the level for the present, and have removed the air compressor pipes. We are now laying them along the side of the hill at surface, and down through Eng's engine-shaft to the end of the 15 cross-cut, where we purpose working the drills to hasten the cutting of the lodes, and to drain the upper levels, when a winze will be immediately started below Gill's lower level to communicate with the 15. The 15 cross-cut has been pushed forward with all possible speed; the ground is easier for driving, and good progress was made during the past week. Several branches have been crossed carrying lead, blende, and sulphur; we may cut into the main part of the lode any day. Our stopes and pitches throughout the mine maintain their estimated values as per last report. Samples of 45 tons of lead ore were sent out on the 2nd inst., for sale on the 16th inst.

D'ERESBY CONSOLS.—J. Roberts, W. Sandoe, Sept. 10: We drove last month towards the Cobblers' lode about 1½ fms., the ground being extremely hard, and in consequence spare for driving. The end to day seems to have intersected a lode or branch; we have cut into it 1½ ft.—it is composed of quartz, quartzose, carbonate of lime, and strong spots of sulphur. We shall be able to say more about it in a day or two.

D'ERESBY MOUNTAIN.—John Roberts, William Sandoe, Sept. 10: The No. 1 adit continues to be just as reported last week; the lode is 2 ft. wide, yielding excellent blende, and very wet. The No. 2 adit is looking as well as we have seen it, producing good lead. At the pump at No. 5 we have put a stope all over the bottom from 5 to 6 ft. deep, and are just now ready to hang the tackle for a deep stope. The lode as far as we can yet see it in both ends and heading side is looking most encouraging, and showing as much lead as we could have expected to find. We are engaged in dressing up a parcel of blende, which will be ready by the end of the month.

DEVON GREAT CONSOLS.—Isaac Richards, Sept. 11: Monthly Report: Wheal Josiah: New South Lode Shaft: During the last month the 130 west has been driven south 1 fm. 4 ft. 6 in., and has intersected the new south lode (thrown up side of the lode in a small cross-course), which has been cut through, and proves to be 1½ ft. wide, composed of capel, quartz, peach, and a small quantity of both mundic and copper ores. The drainage is now being continued west on the course thereof, and as far as extended—1 ft. only—it is of the same general character as at the point of intersection. The 115 fm. level west has been driven 1 fm. 5 ft. 2 in., the lode proving 2 ft. wide, composed of capel, quartz, peach, mundic, and a little copper ore.—Wheal Emma: Inclined Shaft: Dawe's cross-cut south at the 190 east has been extended 1 fm. 5 ft. 6 in., the ground proving tolerably favourable for progress, and congealed, or mineral. The 137 east, east of Friends' cross-cut, or the new south lode, has been driven 2 fms. 2 ft. 3 in.; the lode proving 4 ft. wide, and of a promising description, being composed of capel,

A week of greater activity has prevailed on the Mining Market and although business has been somewhat interrupted by the fortnightly settlement, buyers of tin and copper shares have been numerous. The further advance of 34. per ton in the tin standard corroborates the opinion expressed in last week's Notes, and has given a further impetus to investors in Cornish mines. Both copper and lead are also higher, and it is asserted on good authority that the price of the latter metal will ere long show an advance of 32. or 46. per ton, a wonderful advantage to such mines as Yan, Great Laxey, Leadhills, Roman Gravel, Tankerville, Grogan, and Warren, Horsford, and others, and others, a few little flying, stink in price in either of the above-named properties. They are all first-class undertakings, and thoroughly well managed. Besides the rise in the tin standards, and consequent advance in tin shares, the chief event of the week has been the large dealings in Wheal Crebor shares. The price has gradually improved from a few shillings to 6. 6 1/2. This is an instance of what can be realized in a short time by investing in promising mining stock. It reminds many of the rise in East Canadian shares from 16. to 50. per share. Practical men maintain that no little discovery has been made since that at Devon Great Consols as that at "Little Devon," as Wheal Crebor is sometimes called. It will not be surprising if Crebor shares reach 100. or 150. before the end of the year, as it is estimated that from January next the profits will be 100. per month. Large profits, therefore, can probably be made by investing purchasers.

Attention should also be given to other low priced shares, and one is to be found in Wheal Bassett, a fine old mine, which together with North Bassett has paid half a million sterling in dividends. The mine is provided with ample plant, and

operations are directed to cutting the Great Flat lode, which has been so profitable in South France, enabling large dividends to be paid, and adding immensely to the value of the shares. Wheel Basset shares have been recently subdivided, and a few can now be obtained at about 30s. Only one call of about 7s. per share will, it is expected, be required. To return to copper mines, Brownegelly, but little known, is well worthy of a good trial, which can be given at a very moderate cost. Further comments cannot be made this week, but correspondents can be supplied with full particulars.

Since the above was written a good demand has sprung up for East Caradon shares, and the price has risen from about 5s. to 30s. 35s.

Several enquiries have been made for North D'Esby Mountain shares on the remarks in last week's Journal. Investors seldom have a chance of securing an interest in such a cheap and highly promising mine as is here presented.

In the Stock Exchange, Egypt, Argentine, Mexican, Caledonian, North British, Brighton, A. Erie, Canadas are among those stocks which have been chiefly dealt in. A further fall in North British is not improbable.

76, Old Broad-street, London, Sept. 12. ALFRED E. COOKE.

ELECTRICITY FOR DOMESTIC USE.

Although commercially the application of electricity, whether for public illumination or for the production of domestic light has not been successful, it has been ascertained that for certain special purposes it can be employed very advantageously, and some instances of this are given in an interesting pamphlet—"A Few Remarks upon the Various Uses to which Electricity can be Practically Turned to Account in the House"—by Mr. FRANK FLOWER, diamond merchant, of Piccadilly. He thinks that practically its use in private houses must be postponed till the further development of scientific research, but that in the meantime we are overlooking many other uses to which it may be advantageously applied. Mr. Flower states that he knows little or nothing about electricity, but this gives him a positive advantage, as his efforts are not interfered with by scientific considerations, or the discouragement which would result from brooding over the failures of others who have travelled the same path. He gives the place of honour to the electric clock, and states that after many months of anxious labour, careful thinking out, and various experiments, he has completed a clock or regulator which shall be the standard of time keeping. This clock will, of course, require no more winding than that exhibited by Mr. Shepherd at the Great Exhibition of 1861, or, in fact, any attention whatever, and correct time keeping is insured by the unfailing regularity of the electric current, which keeps the swing of the pendulum as even as it is possible to be.

This is indeed verging on perpetual motion, for so long as the battery lasts, which will be for a great many months, so long will this clock continue to go, and nothing but the actual cutting of the wires can effect a stoppage. Another advantage, most desirable for clubs, hotels, and all large establishments, will be that by a very simple contrivance all other clocks in the same establishment can be put in communication with the one standard timekeeper, and so kept regulated, as they have been for some years past at the Grand Hotel at Paris and elsewhere. The battery which Mr. Flower has in use for this clock is very small, and contains only three cells, yet is so much more than is required that the current is passing through eight miles of wire, although the battery is within 2 feet of the clock. He is therefore, able to turn to other account the superfluous power, such as an alarm bell placed at the top of his house, which can be instantly set in motion upon the opening of his safe or strong room door after a certain hour; and by a slight increase in the number of cells to the battery he will most assuredly again have the electric light when the dark evenings set in.

Mr. Flower is so far satisfied with last winter's result of the electric lighting of his premises as to feel confident that the practical value of the light is now established. He is gratified to find that the electric light does not in any way alter or change the colour of gems. For instance, a diamond that is decidedly "off colour" will under ordinary gaslight pass as a white stone—in fact, is often more brilliant than one purely white; but not so under the electric light, by which the most ignorant could detect the colour that is, for instance, so familiar to us in the Cape diamonds. Now, in a commercial sense, not only to merchants, but to the general public, this particular merit will be of the greatest value, for, as we all know to our cost, daylight leaves us at the winter season soon after 3 o'clock. The business of the diamond merchant must of necessity cease so soon as the gas has to be lighted, for the greatest expert would not risk his judgment by gaslight; but, thanks to this grand scheme of introducing the electric light, not only will the merchant be able to carry on his business to a reasonable hour, such as he would do in the summer evenings, but the public, who are often compelled from circumstances to buy diamonds late in the day, and, consequently, have to rely entirely upon the integrity of the trader with whom they are dealing, will for themselves be able to judge of quality and colour as though buying by daylight. Mr. Flower also refers to the Sermaises-Banis (Marne) experiments in ploughing by electricity.

That further progress is necessary before the general application of electricity can be hoped for Mr. Flower thoroughly understands, but he is sanguine as to its ultimate utilisation. As to ploughing by electricity, he observes that it may be many years before this can be brought into profitable practical use, but if it can what a revolution it will accomplish! If motive-power can be utilised from electricity for one thing, why not for another? Mr. Peronne, of Sermaises-les-Bains, who writing to one of the papers is very sanguine of its ultimate accomplishment, says "It may be utilised in towns and places for industrial purposes—a powerful electrical machine might be constructed, and the power conveyed by wire to different industries at a moderate cost to those using it." And, lastly, he alludes to the electric railway, which has been in operation at the Berlin Industrial Exhibition. This new exemplification of the application of electricity as a motive-power sprang from a question addressed by Herr Westphal, a master builder, of Cottbus, near Berlin, as to the possibility of utilising the force generated by coal burnt at that village by transmitting it to Berlin. That problem ultimately resolved itself into the question how far electric force could be employed as a motive-power on rails. The experiments which were instituted were crowned with success, and led to the construction of the Electric Railway as it has been seen in operation in the Berlin Exhibition.

SILVER MINES IN MISSOURI.—A telegram in the New York papers dated St. Louis, Aug. 24, says:—"A carload of silver ore was shipped from Fredericktown, Madison county, in this state, yesterday, to be reduced in the smelting works in this city. The ore was taken from a mine at Silver Mountain, eight miles from Fredericktown, owned by parties in this city, who opened it a short time since, and have now struck fine ore, yielding 8 ozs. to the ton. A good deal of excitement exists in Madison county and along the spurs of the Ozark Mountains, which section is being vigorously prospected. This mine is a true fissure vein, and promises a large and rich yield."

DUCTILE ZINC.—In order to remove from plates and other forms of zinc its natural rigidity and consequent fragility, which render it difficult to work and greatly limits the range of its use, Mr. JAMES EADE, of Waltham New Town, proposes to subject it to special treatment. Supposing sheet zinc is the material to be treated he prepares a bath of linseed oil, and into it he plunges the zinc plates, subjecting the same to the action of oil while in a state of ebullition for 30 minutes, more or less, according to the thickness of the metal; he then removes the plates from the bath, and after the oil is drained therefrom he cleans their surfaces, when they will be ready for the market. Plates treated after this manner will be found to possess great ductibility, and to be capable of receiving and retaining a high polish; they may be employed in lieu of lead or pewter at a great reduction of cost for a variety of purposes, as for example the linings of sinks and cisterns, and the covering of counter and other surfaces requiring a protective metallic covering. It is proposed to treat other articles than plates in a similar manner to that above described to facilitate the working of the same into various forms.

TIN-PLATES.—During 1878 there were 75 tin-plate works with 264 mills, of which 221½ were working, and produced 4,058,000 boxes of tin-plates.

With this week's Journal a SUPPLEMENTAL SHEET is given, which contains: Original Correspondence: Mineral Statistics of the Mining Record Office (W. J. Thompson); Explosions of Fire-Damp and Coal Dust; on the Fluctuations of Atmospheric Pressure as affecting the Issue of Fire-Damp in Coal Mines; Safety-Lamps; Trials of Safety-Lamps at Wigan; Loose Bedded Stamps; the Monopoly of the World's Consumption of Steel by Swedish Lapland (W. J. Thompson); New Mexico—No. V. (F. M. F. Casin); Colombian Hydraulic Mining Company (A. Gray); Mining in Colorado—No. VIII.—Park County (C. S. Richardson); Is it Right to Pay any Purchase-Money for Mines? (H. D. Hoskold); News from Lake Superior; Crinoid's Rock Drill (J. G. Cranston); Rock-Boring Machinery (T. B. Jordan, Son, and Melhe); New Coal Miner and Rock Drill; Compressed Peat as Fuel in Blast-Furnaces; Sale of Tinstone from Cornish Mines; Cornish Mining as a Means of Investment (C. Bawden); Treatment of Tin Ores (C. Thomas); Literary Amenities (R. Knapp); Lead and Lead Mining—No. III.; Ancient Cornwall; Mining in South Devon; Wheel Crebor (A. Thomas) Wheel Crebor—Special Report; Cardiganshire Mines—Small Capital, and Large Profits—Predictions, and Good Times (A. Francis); Prussian Blue from Red Oxide of Iron; Humid Reduction of Metals, &c.

C. A. SCOTT,
METAL AGENT AND BROKER,
7, PARADE, BIRMINGHAM.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, SEPT. 12, 1879.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Fig. GMP, f.o.b., Clyde...	2 7 6	3 5 0	English, ingot, f.o.b. ...	75 0 0	—
" Scotch, all No. 1 ...	2 6 0	3 5 0	" refined ...	76 0 0	—
Bars, Welsh, f.o.b. Wales ...	4 15 0	5 0 0	Australian ...	73 10 0	74 0 0
" In London ...	5 0 0	5 7 6	Banca ...	75 0 0	(nom.)
" Stafford ...	6 5 0	7 0 0	Straits ...	73 10 0	74 0 0
" in Tyne or Tees ...	5 5 0	5 10 0			
" Swedish, London ...	8 10 0	8 15 0			
Rails, Welsh, at works ...	5 0 0	—			
Sheets, Staff., in London ...	5 0 0	7 15 0			
Plates, Staff., in London ...	5 12 6	—			
Hoops, Staff., in Lon. ...	15 0 0	7 2 6			
Nail rods, Staff., in Lon. ...	6 0 0	6 5 0			
English, spring ...	13 0 0	19 0 0			
" cast ...	30 0 0	40 0 0			
Swedish, keg ...	13 0 0	—			
" fag. ham. ...	15 0 0	—			
English, pig, common ...	14 15 0	—			
" " W.B. (nom.) ...	15 0 0	—			
" sheet and bar ...	15 15 0	—			
" pipe ...	16 5 0	—			
" red ...	17 0 0	—			
" white ...	25 0 0	26 0 0			
" patent shot ...	18 0 0	18 10 0			
Spanish ...	14 10 0	14 12 6			
Metal, per cent. ...	18 0 0	20 0 0			
Ore, 10 per cent. ...	20 0 0	25 0 0			
Flasks of 75 lbs., ware ...	6 5 0	—			
Silesian ...	18 15 0	19 0 0			
English, Swansea ...	19 0 0	—			
Sheet zinc ...	24 10 0	25 0 0			

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; 1X 6s. per box more than 10 quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—The metal market continues to show signs of revival both in the way of price and demand, and the latter following up the former has considerably helped towards the maintenance of the sellers' market. Last month witnessed a very important advance in almost every branch of the trade upon the previous few months, and most sellers appear to be hopeful of a continuance of the improvement, providing supplies are kept moderate. Just lately a curtailment has taken place in the imports of a few metals, and should they come forward in future in no larger quantities than will meet consumers' requirements in all probability higher prices will shortly be realised, as one of the best supports to the enhancement of value is the favourable position of statistics. The better tone which prevails in our market may be attributed in a great measure to renewed speculation. As to how long this will last it is impossible to predict, for when once the spirit of speculation is set in motion its operations and dimensions pass beyond calculation. A powerful speculation may be able to temporarily effect an elevation of prices, but the position of our markets must rest upon something of a more reliable nature than mere speculation, and not the least amongst others is the power of purchase possessed by consumers.

The recent state of affairs, we think, scarcely justifies the assumption that the circumstances of the public generally have been improving, but, on the contrary, the severe losses that have been sustained, and the general depression in trade, are good reasons for believing that former means have been considerably reduced, and only in a very few instances could they have been increased. It is most important, therefore, that certain restrictions should be put upon speculation at the present time, otherwise the bona fide trade may be seriously injured. A sudden inflation is not likely to be attended with any real advantage, and it would be a cause of great regret were our markets to experience a repetition of the mania of 1871 to 1873. In ordinary, sellers bitterly complain of the keenness of competition, and yet upon the first spurt which takes place in business they are always eager to push up prices, which naturally drives away orders to other countries. Now, as the depression in trade during the last few years has been very great, it would, indeed, be most unfortunate if upon the first evidences of revival the markets are permitted to pass into an artificial condition. It is certain that up to a very recent date the reduced prices which have been obtained, or stimulated consumption, and it will be strange if higher prices now accomplish that which lower ones failed to remedy. The Board of Trade Returns show that the exports of most metals compare favourably with the shipments made during the corresponding period of last year and 1877.

COPPER.—This market has remained very active throughout the week, and prices are rapidly advancing. Extensive transactions are reported from day to day to be taking place, and the position of the market is now much stronger than has been the case during the past few months. Enquiries are chiefly for the raw material, as contracts for manufactured are still limited, nevertheless sellers of the latter are considerably raising their quotations, owing to the higher prices realised for the former. Whether the improved tone will be permanently maintained remains to be seen. Should moderate supplies from all the chief sources of production be sent forward then a good influence will undoubtedly be exercised over the trade, and a gradual reduction in the reduced prices will probably take place, but if, on the other hand, producers show the slightest anxiety about the course of the market, and display the least inclination to press sales then lower prices will be inevitable, as the better tone having occurred principally from speculation the trade could not stand such a shock, and there would be nothing to prevent the value of this metal falling again to as low a figure as it has ever before touched. Quietude is the characteristic feature of the shipping trade for sheet copper, as indentors' limits for the most part rule below sellers' prices, necessitating the orders to be referred back. Yellow metal is in little better request, and prices are advancing, 5½ being now quoted 4 by 4 sheets.

IRON.—It is reported that the iron trade continues to show signs of increased activity, and as prices for the raw material are daily advancing, sellers of the manufactured are becoming much firmer in their quotations. It seems rather imprudent for manufacturers to advance their prices at the present time, as continental makers do not in like manner increase their rates, and, consequently, if English sellers are not careful they will drive their orders away again, to be executed by their foreign neighbours. The improvement which is said to have taken place in the country has not yet reached London, for the trade here still remains very dull. The Board of Trade Returns for all sorts of iron show that the shipments for last month were 258,223 tons, against 213,116 tons in August, 1878, and 210,119 tons in August, 1877.

The returns published from most of the producing parts of the country are of a satisfactory character, though it seems probable that these reports must refer more especially to one or two of the leading manufacturers than to makers generally, as there can still be found many who complain of the dullness of the times and the monotony of business, and thereby show that they are not reaping the benefit that others appear to be doing. From Newport it is stated that the recent improvement manifest in the trade at South Wales has continued, and some fairly large orders have been executed on American account.

The demand from that country has certainly improved, but sellers have the greatest difficulty to obtain increased prices. About 4000 tons of railway iron were cleared last month to the United States, and shipments to other ports remain, on the whole, tolerably satisfactory. Some of the works are still in an unsatisfactory state, owing to the wages' dispute, and a few furnaces have been blown-out. The market for bars is dull, and future prospects seem somewhat gloomy. The trade at Sheffield is showing signs of revival, and sellers are said to be booking more orders than has lately been the case. Prices are stiffening, and hopes are entertained in the permanency of the improvement, and many makers appear so certain in the permanency of the rise that they are averse to booking orders for forward delivery. Plate makers are receiving increased numbers of contracts, and the rolling-mills are more active. There is not much fresh

to be reported from Birmingham, though the development of the improvement in trade continues to increase. Sheets, and most other descriptions of iron, are in rather better demand, and quotations are for the most part somewhat firmer. The trade at Leeds is reported in a less satisfactory condition than could be wished for, and business, although looking a little better, does not seem to be in a flourishing condition as is the case over the North of England markets. Some makers are busier, but the majority of mills are slack. A moderate demand exists for best Yorkshire brands, and railway iron is coming more in request.

The Middlesbrough market is reported to be tolerably well maintained, and although there is not a very brisk business doing a good deal of iron is said to be changing hands. There is not much alteration in quotations, No. 1 being quoted at 38s. 6d., No. 3 at 35s., and No. 4 for 34s. net, with buyers at about 6d. below these prices. The enormous increase in stock, of over 13,000 tons for the month of August, has somewhat damped the condition of the pig-iron trade, especially as the shipments have been found to be less than was generally expected. It seems to be generally thought that prices will not recede during the autumn, and current rates have been paid for delivery early next year. In the finished iron trade there is not much to be reported, though the market is slightly firmer. The shipments from Middlesbrough last week amounted to about 13,000 tons of pig-iron. Manufactured shows very little change, bars being procurable at 57s. 2d., 6d., and plates and angles at last week's figures. The blast-furnaces of Messrs. Hopkins, Gilkes, and Co. were put up for auction last Tuesday, but reached such a low bid that they were not sold. The Glasgow warrant market has been somewhat excited, and prices have assumed an upward tendency, and are now quoted at 47s. 6d. per ton.

SHIPMENTS.	Tons	1879
For the week ending Sept. 6, 1879	11,795	
For the week ending Sept. 7, 1878	9,918	
Increase	1,877	
Total increase for 1879	70,843	
Imports of Middlesbrough pig-iron into Grangemouth:—		
For the week ending Sept. 7, 1878	6,090	
For the week ending Sept. 6, 1879	4,850	
Decrease	1,440	
Total decrease for 1879	43,880	

In blast Sept. 6, 1879 90
In blast Sept. 7, 1878 92

TIN.—This metal is rapidly increasing in value, owing to the continuance of good deliveries and moderate supplies. Since our last issue prices have risen to the extent of about 3s. per ton, foreign tin now being quoted at 73s. 10s. to 74s., and English 76s. for ingots, 76s. for bars in 4-cwt. barrels, and 76s. 10s. 2-cwt. barrels. There is a fair demand for consumption, and speculators are showing some activity, which gives an animated appearance to the market. Should the imports during the remainder of the month keep as limited as they have during the earlier part, and the deliveries as well maintained, there is every reason for expecting the next statistics to show a further reduction in stocks. There is a very marked falling off in the supplies from Australia, chiefly, it is said, on account of the miners finding it difficult to make profits at recent rates.

QUICKSILVER.—The demand has not been as active as during the preceding week; but the price has been firmly maintained, and California cables advise a hardening tendency.

SPELTER.—This metal has shown a still further advance in value of about 10s. to 15s. per ton, to-day's price for Silesian being 18s. 15s. to 19s. per ton, at which quotation the market closes firm. There is a very fair demand for home consumption, but shipping orders to India continue of a limited character. There is not much doing in English hard, and sellers quote about 14s. per ton.

TIN-PLATES.—At the early part of the week the tin-plate men resumed work at the former scale of wages, but with certain restrictions of make; working days increased to five instead of four days per week; but the production will, it is said, not be increased, on account of the restriction above referred to.

LEAD.—There is hardly any change to be reported in the state of this market. Quotations are firm, though there is no advance upon last week's figures, the limited demand preventing any rise taking place.

STEEL.—A small business is doing, at previous rates.

Messrs. FRY, JAMES, and Co.—There has been a continuance of more life in our markets, and several important improvements in prices have been established. COPPER has been in growing demand, and daily small advances in prices have been paid until upwards of 3s. per ton improvement has been realised for Chilian, especially for forward and arrival lots bought for resale, whilst all other descriptions have participated in the rally, although to a smaller extent. IRON.—The report of some large sales of rails is confirmed, and although the prices obtained have been extremely low, the effect has been to bet a better market generally. TIN continues its upward course of prices—the advances since our last amounting to from 3s. to 4s. per ton, and a confident tone is still maintained by both smelters and importers. SPELTER has wavered somewhat, and the little business done has been at a slight decline, but there are again signs of recovery. LEAD keeps steady, without any noticeable feature. TIN-PLATES are a trifle firmer generally.

The MINING SHARE MARKET is among the most active of all markets just now. The continued rise in metals, and the discovery at Wheal Crebor, have given it the required impetus, and it is becoming difficult to get particular shares except at wide and advanced prices. Some months ago we expressed the opinion that all that was wanted to give this impetus to business was a rise in metals or a good discovery in a mine, and now it appears we have both. The fortnightly settlement, which has occupied a good deal of attention this week, has been heavier than for a long time past, and stock, especially in one or two mines, has been rather short for delivery. The mines mostly dealt in have been Wheal Crebor, South Frances, Dolcoath, Carn Brea, Tankerville, Wheal Grenville, South Crofty, Roman Gravel, East Caradon, Tincroft, and a few others.

TIN is much firmer, and the standard for ore advanced on Wednesday 3s. per ton—making a rise altogether of 10s. per ton. Tin mines until this rise had become rather weaker, and were more freely offered; but on Thursday a reaction set in again, and most of them left off better. Dolcoath are 31s to 33s; Carn Brea, 31s to 33s; Tincroft, 10s to 10½. South Frances, 8½ to 9½; the lode in the 215 west is worth 30s. per fathom. South Condurow, 12s to 12½. South Crofty have now advanced to 23s, 25s; the lode in the 235, east of cross-cut, is worth 20s. per fathom. Cook's Kitchen, 2s to 2½; East Lovell, 1½ to 1½; East Pool, 1½ to 1½; West Basset, 5s to 5½; West Frances, 5s to 5½; Wheal Agar, 3½ to 4; Wheal Basset, 1½ to 1½; Wheal Peevor, 1½ to 1½. Wheal Grenville, 4½ to 5; the accounts to be presented to the meeting on the 25th show tin sales for four months, 84 tons, 3131s. 12s. 8d.; calls received, 1977s. 5s. 4d.; balance in hand last account, 2008s. 5s. 9d.; the costs for same period were, labour, 2432s. 1s. 8d.; bills, 1425s. 11s. 3d.; and other charges, reducing the balance to 1032s. 0s. 5d. The assets consist of this balance of 1032s. 0s. 5d.; and calls unpaid, 47s. 6s. The liabilities 2781s. 0s. 7d. The report states that the mine is opening out well going east, and the agents hope to sell 75 tons of tin during the next twelve weeks, at which time, if the lode opens out in the 165s, the agents expect, they will be in a position to sell 30 tons a month, which, at a moderate price for tin, would leave a fair profit to the adventurers. At Wheal Uny meeting the accounts showed a loss of 1577s. on four months' working, and a debit balance of 3091s. 12s. 6d. A call of 7s. 6d. per share was made.

COPPER is firmer; the standard for ore will probably advance again, and a good deal has been doing in copper shares at better prices. Some low-priced shares have, in fact, advanced cent. per cent. Devon Great Consols, 1½ to 2. Wheal Crebor have been in great demand, and shares advanced to 6½, leaving off 6½ to 6½. The new lode in the 108 is worth 70s. per fathom. In the 120 the same lode is worth 20 tons of copper ore per fathom. A cross-cut has been put out at the 48 to cut this same new lode, and which may result in another important discovery before long. East Caradon have been in request; they advanced from a nominal price on Thursday to 8s., then to 15s., and leave off 1 to 1½. Marke Valley have also risen to 8s. Parys Mountain, ½ to ¾; Morfa Du, 10s. to 17s.; West Tolgu, 26 to 28; Mellanear, 3½ to 3½; Bedford, ½ to ¾, and in demand.

LEAD.—Not so much has been done in lead mines generally, but prices when not merely nominal are rather firmer. Lead seems still advancing, and so does blende. Van, 15 to 16; the bottom level is improving. The sampling this month will be 200 tons of lead and 150 tons of blende. In Pately Bridge the Rake vein in the 30 is producing more lead, and improving. The sump winze under this level is in a splendid lode, worth 4 tons of lead ore per fathom. Tankerville, 2½ to 3; no change in the mine since general report of last week. Roman Gravel, 8½ to 8½; the lead ore (150 tons) realised 1430s., or an advance of 1s. per ton on last sale. Aberlyn, 10 to 12; the sale of blende this month (50 tons) realised 164s. 8s. 6d. The best parcel brought 3s. 12s. per ton delivered at a station close to the mine. West Pateley, 2½ to 2½; the Craven Cross vein in the 55 is looking as rich as ever, the ore-bearing part being 2 ft. wide, and worth 6 tons of ore per fathom.

Leadhills have been enquired for at 2 to 2½. Brownegelly, 1 to 1½;

Comb Martin, 7s. 6d. to 12s. 6d.; Denbighshire, 1½ to 1½; East Van, 1½ to 1½; Glenroy, 1½ to 1½; Gorse and Merlyn, 2 to 3; Great Holway, 1½ to 1½; Great Laxey, 1½ to 1½; Herodfoot, 2½ to 2½; Minera, 9 to 11; North D'Eresby, 1 to 1½; West Chiverton, 2 to 3; West Holway, 1½ to 1½; Bwlch United, 1½ to 1½; the winze between the 60 and 70 levels is communicated, and a large section of ore ground laid open for stoping. Caron, 2 to 2½; Frongoch, 1½ to 2; Grogwinlon, 2½ to 2½; Hartington, 1½ to 2; Crosswood, 1 to 1½; Mawston, 1½ to 2; Red Rock, 1½ to 2; West Wye Valley, 1½ to 1½; Wye Valley, 1½ to 1½; this mine has sampled 50 tons of lead ore for sale next week. Pandora, 7s. 6d. to 12s. 6d.; the stope in the end of the 33 south, in new lode, has been communicated with No. 1 winze from the level above, laying open ore ground valued at 2 tons of lead and 1 ton of blende per fathom. This will give ventilation and enable the 33 to be pushed forward. Gwynnynydd, 4 to 4½.

FOREIGN MINES.—Canada Gold, 2 to 2½; Ruby, 1½ to 1½; Tent, 2 to 2½; the new arrangement will enable washing to be continued for a long time yet. Cape Copper, 28 to 29; the directors have declared a dividend of 10s. per share, payable on the 29th. Placerville, 2½ to 2½; Chontales, 1½ to 1½; Colorado, 1½ to 1½; Frontino and Bolivia, 2½ to 2½; Don Pedro, 2 to 2½; the produce for the month of August is 2550 oits. of gold. Hultafall, 1½ to 2; New Quebrada, 2½ to 2½; Panulillo, 1½ to 2; Richmond, 8 to 8½; St. John del Rey, 265 to 275; Santa Barbara, 32s. 6d. to 35s.

The Market for Mine Shares on the Stock Exchange has been somewhat interfered with by the settlement, yet a considerable amount of business has been done, and prices have been well maintained. The gratifying rise in the prices of copper and tin ores noticed last week has been followed by a further rise of 3½ in the tin standards on Tuesday. There have been no public sales of copper or lead ores during the week; but the prices realised where parcels have been disposed of privately show that the advance is fully maintained. The general feeling amongst dealers is that the long wished for period of activity has now really commenced, and promoters are so sanguine that capitalists entertain similar views that prospectuses of several undertakings which have for some time been kept in abeyance are forthwith to be issued. Those interested may congratulate themselves that the *Mining Journal* is now printed with new and handsome type, so that the attractive features of the several undertakings will be more clearly seen by those whose attention is drawn to them through its columns; whilst the extra-prominent figures have been specially cut, in order to prevent any doubt on the part of the reader as to the percentage of profit promised.

The important discovery at Wheal Crebor, which in the opinion of some is now to equal Devon Great Consols in its most prosperous days has caused quite an excitement in the district, and owners of neighbouring mines are sanguine that by now reopening them large profits may be realised. First among these is a set adjoining on the east, the Old Crowdale, which for many years paid handsome dividends. The Crowdale now to be worked "is situated between Rix Hill and Old Crowdale Mine, which was once the richest copper mine in the district, and separated from it by the River Tavy. The two lodes in this set being a continuation of those from Old Crowdale, this mine is spoken of as being a good speculation. One important feature in this mine is that the quality of the ore is the best in the district, and fetched the best price in the market." Immediately west of the Old Crowdale are Wheal Crebor, Gunnislake (Clitters), Hombush, and the Caradons, "making a range on the same lode which can be traced for 35 miles of the best copper mines in Cornwall or Devon." There is now about 5000 of copper ore in the 50 ft. level, which could be sent to the surface immediately the water is forked. In the Crebor, the next on the west, a new vein of ore has been cut, dipping east towards the Crowdale. This lode was valued in their level a few days ago at 1000 per fathom. These amalgamated sets make one of the finest mining properties in the West of England, and will afford a return of at least 20000 within three months from the time the water is forked. It is understood that the company is to be formed on the Cost-Book System, and that the prospectus will appear in an early Journal.

The cooperation of British capitalists will probably be sought at no distant date in connection with the several great engineering projects now receiving attention in France—the Sahara Railway and the Biscay and Mediterranean Canal being among the most prominent—and which are certainly free from the impracticability, &c., of the Channel Tunnel and similar schemes. The Trans-Sahara Railway was fully discussed at a meeting, on Wednesday, of the first sub-committee appointed to consider the project. The veteran engineer, Mr. F. de Lesseps, occupied the chair, and several speakers urged the necessity of the committee to direct their efforts to the exploration of Central Africa in connection with the mine, and also to the working of the salt mines, which one speaker regarded as the key of the Sudan. The other project is not less bold. The Canal de Panama announces that after an interview with Mr. de Freycinet, who is still at Luchon, Mr. Merlin, the Prefect of the Haute Garonne, has taken the necessary steps for surveys in connection with the maritime canal from the Bay of Biscay to the Mediterranean. The same journal announces that Paris, Lyons, and Mediterranean Railway Companies are busily occupied with the final organization of "lightning express" (trains-clairs) between Marseilles and Paris, and vice versa. The service will be commenced during October. With the improved machines now ready the journey will be performed in 12 hours instead of 18 hours; the present number of stoppages will be dispensed with. Between Marseilles and Lyons, for example, the lightning express will stop only at Avignon and Livron; and as to the journey between Lyons and Paris, it will probably be found that the stoppage for 1½ hour at Macon for refreshment is unnecessary.

The utter uselessness, commercially speaking, of the stale mineral statistics published in this country, owing to the total want of energy on the part of those entrusted with the preparation and issue of them to the public, has frequently been noticed in the Journal. The study of the 1878 statistics in the autumn of 1879 is really little more profitable in a business point of view than reading accounts of the mining operations of the ancient Greeks or Romans, yet English Government officials are too well paid and too little worked to leave a hope of their doing the practical habits. By the courtesy of the Minister for Mines of Victoria we are enabled to publish the Victorian statistics, which are far more useful and complete, six months before the British statistics—even those of the Government Inspectors are thought of, and now, at the beginning of September, France has issued her mineral statistics brought up to the end of June. It appears that during the first half of the present year France produced 5,074,000 tons of coal and anthracite, and 257,000 tons of lignite, making 5,331,000 tons of mineral fuel in all, or an increase of 81,000 tons as compared with the corresponding period of 1878. Pas-de-Calais is the department which heads the list—with 1,380,000 tons; then Nord, with 1,577,000 tons; Loire, with 1,467,000 tons; and Gard, Saône-et-Loire, Allier, Aveyron, Bouches-du-Rhône, Tarn, and Hérault, following in the order mentioned. The richest coal and anthracite basin in France is that of Valenciennes, in Nord and Pas-de-Calais, which during the six months referred to yielded nearly 44 per cent. of the aggregate production of France; whilst Bouches-du-Rhône furnishes four-fifths of the total production of lignite, the Aix lignite basin in that department being the most important in the country. During the six months ending June the production of pig-iron was 701,000 against 776,000 tons in the corresponding period of last year, being a diminution of 75,000 tons; the production of finished iron was 391,000 tons, or 17,000 tons less; but in France, as in this country, the transition from iron to steel is going on, and hence the steel production for the six months was 155,000 tons, or 15,000 tons more than last year. The mineral resources of France are receiving far more attention than formerly, and several promising metalliferous properties will, it is expected, ere long be put upon the market with good prospects of success. In Hérault several mines of copper in one district, and of calamine, blende, and galena in another are being offered at a price which ought to satisfy any capitalists prepared to find working capital for their development.

The French markets have been scarcely so strong this week, but there is nevertheless plenty of business doing. The Crédit National of this morning remarks that seven or eight years ago every one cried Poor France! whilst now the entire world wishes to be in an equally good position, and adds that the speculation which gives the present lively character to the Paris Bourse is not so regrettable as some of the morose and bilious philosophers would have it supposed. That there is nothing alarming in the speculation which is going on, and which is not likely to trench largely upon the hard-earned savings of the nation, but that the real danger lies in the weakness of the financial institutions with which France is inundated. It is against these that capitalists should be on their guard.

Cape Copper, 28 to 30; at a board meeting on Wednesday, the directors declared a dividend of 10s. per share. The returns for July were from Ookiep 980 tons of 29 per cent. ore; from Spectakel, 75 tons of 37 per cent.; and from Nababep 28 tons of 21 per cent. During August 1400 tons of ore were sold, at an average of 10s. 7d. per unit, and realising approximately 22,000l.

Pestarena, 1½ to 1½; the manager writes (Sept. 11) that the gold returns for the past month were—From Pestarena, 377 ozs. 12 dwts. for 288 tons of ore, the ley of the ore being 1 oz. 6 dwts. 8 grs. per ton; and from Val Toppa 194 ozs. 13 dwts. 2 grs. from 442 tons, the ley of the ore being 8 dwts. 19½ grs. per ton. Taking both mine districts the average yield per ton, exclusive of stamp trials, was 15 dwts. 16 grs.

St. John del Rey, 265 to 275; the latest telegram from the mines at Morro Velho, dated Rio de Janeiro, Sept. 11, states that the produce for August was 35,000 oits., of the value of 13,562l. The ley of ore was unintelligible in the telegram. At Cuiba 200 tons were stamped in 15 days, the ley of the ore being 2½ oits. per ton. Don Pedro North del Rey, 2 to 2½; the telegram dated Rio de Janeiro, Sept. 9, states that the produce for August was 2550 oits.

Richmond, 8 to 8½; the usual telegram from the mines at Eureka,

Nevada, states that the week's run with one furnace was \$26,000, from 400 tons of ore. During the week the refinery produced doré bars to the value of \$25,000. They will start No. 1 furnace on Thursday. The manager (Aug. 20) reports that there is nothing new with regard to the mine. Explorations on the 600 level are looking very encouraging; they have drifted about 70 ft. in low grade ore, with some bunches of good ore. He expects to strike ore of paying quality in this place shortly. At present only one furnace is in operation on ore. Nos. 1 and 3 are shut down for repairs. It will take about three weeks to get No. 1 ready for smelting again. The No. 4 furnace is now smelting by products from the refinery.

Sierra Buttes, 1½ to 2; ditto, Plumas Eureka, 2½ to 2½; the result of the operations during August show an aggregate profit of \$28,082. At Sierra Buttes Mine the receipts were \$30,360, and the total working expenses \$22,305; profit, \$8055. At Plumas Eureka Mine the receipts were \$43,340, and the total working expenses \$23,313; profit, \$20,027. London and California, 1½ to 1½; the clean up at the Original Amador Mine for August is estimated at \$5000.

In Hydraulic or Gold Washing Companies' shares there has been scarcely anything doing, but the American properties are reported to be looking well. With regard to the Columbian Hydraulic Company, another interesting communication from Mr. A. Gray will be found among the correspondence.

In Lead Mine shares a considerable amount of business has been done, and as much less lead is being produced, whilst the demand is steadily increasing, great confidence is felt that for some time to come lead mining will be a desirable class of investment. To investors there is nothing so agreeable as dividends; and the proportion of lead mines which have maintained their dividend-paying power through the period of depression is fully as great as that of mines producing other metals. During the present week the Fortuna Company has declared a dividend of 1s. 6d. per share, and the Linares Company has declared a dividend of 2s. per share. Both are free of income tax, and payable on Oct. 4. Now, the Spanish lead, out of which these companies make their profits, has suffered as much or more than the English during the depression, and the fact of dividends having been continued reflects the highest credit upon the directors, the managers—Messrs. John Taylor and Sons—and the resident agents, and tends to show how much may be done even under adverse circumstances by straightforward honest mining, steady perseverance and energy, and sound judgment.

Van, 15 to 16; the ends in the 105 and 120 are improving. Other parts of the mine unchanged. The monthly sampling will be 200 tons of lead and 150 tons of blende. Mineral Corporation of Great Britain, 1½ to 1½; nothing new is reported this week; operations are going on as usual.

Grogwinlon, 2½ to 2½; the manager's report states that the mine is looking as well as usual, and that there are indications of early improvements at various points. A parcel of 100 tons of lead will be sampled in a few days. Frongoch, 1½ to 2; the delay caused by the recent heavy floods is now being made up, every part of the mine being again free of water, and good progress making at all points. Prospects continue very satisfactory both in the shallow and the deep levels, a large quantity of ore is being raised, 100 tons of blende have been sampled this week, and 150 tons of lead ore, to be sampled on the 25th inst. Caron, 2 to 2½; the mine is reported to be not looking quite so well in the bottom, as the level is being driven through a run of poor ground corresponding to what was encountered in the level above, and this is expected to give place to productive ground in a short distance from the present end. Supt was the case in the 10, and the indications are exactly similar at the present level.

Wye Valley, 1½ to 1½; a parcel of 50 tons of lead has been sampled for sale next week. The mine is looking well, and the lode in the intermediate level is valued at fully 2 tons of lead per fathom. West Wye Valley, 1½ to 1½; good progress is making in driving the bottom level east, and the lode is steadily improving in character. Mawston, 1½ to 2; Hartington, 1½ to 2; Crosswood, 1 to 1½. Red Rock, 1½ to 1½; the greater part of the debenture capital is now subscribed. The mine is looking much better than for some time past, and 40 tons of lead are to be sold at once. Pateley Bridge, 1½ to 1½; the Rake vein in the 30 east is giving appearance of further improvement, and is producing an increased quantity of lead ore per fm. The sump winze under this level is also looking better, and now worth 4 tons of lead ore per fathom. No change elsewhere.

The subjoined is the list of the closing quotations:—

Ashton, 1½ to 1½; Carn Brea, 30 to 32½; Devon Great Consols, 1½ to 2; Dolcoath, 32 to 33; East Caradon, 1½ to 1½; East Van, 1½ to 1½; Gwynnynydd, 4 to 4½; Glenroy, 1½ to 1½; Great Laxey, 1½ to 1½; Hingston Down, 1½ to 1½; Leadhills, 2 to 2½; Marke Valley, 1½ to 1½; Pateley Bridge, 1½ to 1½; Tincroft, 10 to 11; Van, 14 to 16; West Basset, 5 to 5½; West Chiverton, 2 to 3; West Pateley, 2½ to 2½; Wheal Crebor, 6½ to 6½; Wheal Grenville, 4 to 4½; Almaden, 2½ to 2½; Blue Bell, 2 to 2½; Canada Gold, 2 to 2½; Cape Copper, 28 to 30; Chontales, 1½ to 1½; Colorado, 1½ to 1½; Don Pedro, 2 to 2½; Eberhardt and Aurora, 1½ to 2; Frontino and Bolivia, 2½ to 2½; Hultafall, 1½ to 2; New Quebrada, 2½ to 2½; Pestarena, 1½ to 1½; Placerville, 2½ to 2½; Plumas Eureka, 2½ to 2½; Port Phillip, 1½ to 1½; Richmond Consolidated, 8 to 8½; St. John del Rey, 265 to 275; Sierra Buttes, 1½ to 2; United Mexican, 2½ to 2½; Ruby and Dunderberg, 1½ to 1½.

INSURANCE SHARES have, according to the evening's report of Mr. W. L. Webb, of the Stock Exchange and Finch-lane, been dealt in as follows: Alliance, British and Foreign, 29½; Indemnity Marine, 93½ to 94; London, 61; Marine, 52½; Ocean Marine, 6½; Pelican, 60 to 60½; Rock Life, 8½; Thames and Mersey, 5½; Universal, 10½; Alliance, British and Foreign, and Universals rather offering, but better business doing.

Subjoined are the closing quotations:—Alliance, British and Foreign, 29½ to 30½; Alliance Marine, 27 to 29; British and Foreign Marine, 12½ to 12½ prem.; Commercial Union, 13 to 13½; Imperial Life, 22 to 24; Indemnity Marine, 93 to 95; Lancashire, 55 to 56½ to 57½ prem.; London, 59 to 61; London and Lancashire, 57 to 58½ prem.; London and Provincial Marine, 13½ to 13½ prem.; Liverpool and London and Globe, 13½ to 13½ prem.; Marine, 51 to 54; Maritime, 2½ to 2½ prem.; North British and Mercantile, 44 to 46; Northern, 38 to 39 prem.; Ocean Marine, 1½ to 2 prem.; Queen's, 2½ to 2½ prem.; Railway Passengers, 7½ to 8½; Rock Life, 7½ to 8½; Royal Farmers, 5½ to 6; Sea, 2 to 2½ prem.; Scottish Commercial, 18s. to 20s. prem.; Standard, 3½ to 3½ prem.; Thames and Mersey, 5½ to 6½ prem.; Universal Marine, 5 to 5½ prem.; Union Marine, 3½ to 3½ prem.

GAS SHARES.—The principal business in these shares, according to this evening's report of Mr. W. L. Webb, of the Stock Exchange and Finch-lane, has been in Bombay, 6; Continental Union, 18½; ditto, ditto, New, 1869 and 1872, 11½; Commercial, 18; European (Limited), 17½; ditto, ditto, New, 8; Gas Light and Coke, 17½ to 17½; ditto, ditto, 4th issue, 16½ to 17; ditto, ditto, 5th issue, 16½ to 16½; ditto, ditto, 10 per cent. pref., 210; ditto, ditto, 10 per cent. pref., 210; ditto, ditto, 7 per cent. pref., 210 to 210½; ditto, ditto, 4 per cent. debenture stock, 99; ditto, ditto, 4 per cent. debenture stock, 108½; Imperial Continental, 172 to 173½; London, 171½; Metropolitan of Melbourne 6 per cent. debenture, 104½; Phoenix, 35½ to 36; ditto, 1876 issue, 30½; ditto, new, maximum div., 7½ per cent., 110 to 110½; Rio de Janeiro, 27¾; Surrey Consumers, 18½ to 18½; San Paulo, 11. Gas shares are all enquired for, and there has been steady buying all the week. Closing prices are as follows:—Basis, 12 to 12½; Boney, 6 to 6½; ditto new, 5 to 5½; Commercial, 18 to 18½; Continental Union, 13 to 13½; European, 16½ to 17½; Gas Light and Coke, A, 177 to 179; Imperial Continental, 170 to 175; London, 169 to 173; Oriental, 6½ to 7; Para, 4½ to 5; Phoenix, 35½ to 36½; Rio de Janeiro, 26 to 28; Surrey, 18½ to 18½; South Metropolitan, 195 to 200.

TRAMWAYS.—The closing prices this evening, as quoted by Mr. W. Abbott, Tokenhouse-yard, were—Anglo-Argentine, 4½ to 4½; Barcelona, 10½ to 11; Birkenhead, 5½ to 6½; Ditto 6 per cent. Pref., 10 to 11; Belfast, 7½ to 7½; Chester, 10 to 10½; Dublin, 11½ to 12½; Edinburgh, 14½ to 14½; Glasgow, 9½ to 9½; Hull, 12½ to 12½; Imperial, 9 to 10; Leeds, 10 to 10½; Liverpool, 10 to 10½; London, 11½ to 11½; London Street, 10½ to 10½; Metropolitan, 14½ to 15; Provincial, 10 to 10½; Sheffield, 7½ to 8½; Sunderland, 9½ to 9½; Vale of York, 10 to 10½; Vale of Clyde, 3½ to 3½; Wolverhampton, 10½ to 10½; Yarmouth, 8 to 9; Hughes Locomotive and Tramway Works, 9 to 9½; Tramways and General Works, 6½ to 6½.

EBERHARDT AND AURORA.—The tunnel is 4300 feet. It has already passed the Old Eberhardt Mine, and is making for the heart of the mountain.

RICHMOND (from a Correspondent).—The prospects were never so bright as now. Results in the immediate future will greatly confound the "bears."

BEDFORD UNITED.—The steady rise in the price of copper is causing an active demand for these shares, and as one of the stopes has been considerably augmented, and the ore being of a high standard good profits, if not resumption of dividends, may be speedily looked for.

EAST ROMAN GRAVELS (late West Tankerville).—Since this company commenced operations in March last the shaft has been sunk to the 96 ft. level, and during the same time the returns have yielded 1373l. 3s. 6d., while the working costs, including merchants' bills, have been 1373l. 0s. 6d. The prospects are exceedingly good.

TANKERVILLE.—The men have already cleared the pump sump-shaft 20 ft. 1 ft., and it is calculated that in 6 ft. further the bottom will be reached, where it is reported, as stated by Capt. Waters at the late meeting, there had been a magnificent run of ore. He (Captain Waters) also said that he had been down in the mine, and found splendid traces of ore. He believed that they would have a rich bunch of ore in this part of the Tankerville sett. Any day this may be met with, and if so it will at once at least double the value of the property.

BWLCH UNITED.—The operations proceed in the most satisfactory manner at the works. Extensive deposits of silver-lead ores are being developed, with a certainty of increasing returns for years to come, almost unexampled in the Goginan district. The surface buildings, machinery, and plant are replete, and ample for present and extended operations. The Goginan, standing at the apex of the mountain, has

proved profitable, and paid 9000l. per annum in dividends. The deepest levels at Bwlch United are above the Day level of the Goginan. Hence the thousands of tons raised from the latter is below the present depth of the former.

PANDORA.—The returns more than met the cost in the past month. The rise from the 33, on new lode, has this week been communicated with the winze from the level above, and the lode still worth 2 tons of lead and 1 ton of blende per fathom. This will give a fine piece of ground for stoping. Other parts of the mine look well; and the property bids fair to turn out as well as has been anticipated.

CONSETT IRON COMPANY (Limited).—The annual report of the directors to June 30 recommends a dividend of 10s. per share, in addition to the interim distribution of 5s. paid in February. A balance of 3071l. is carried forward. The year's profits were 55,995l., and great satisfaction is expressed at the results of the working of the property as shown by the report and the accompanying accounts. It is, moreover, stated that the development of the change from iron to steel is being constantly watched by the directors, but that they do not think the time has yet arrived for their company to take any action in the matter.

The creditors of the Gunnislake Granite Company, Cornwall (Limited), are to send in their claims by Oct. 20.

CAPPER PASS AND SON, BRISTOL,

PURCHASERS OF

LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD, BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA, TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE, containing LEAD, COPPER, TIN, or ANTIMONY.

GEO. G. BLACKWELL,

5, CHAPEL STREET, LIVERPOOL,

PURCHASERS OF

MANGANESE, ARSENIC, FLUOR-SPAR, WOLFRAM, BLENDE, CALAMINE, CARBONATE AND SULPHATE OF BARYTES, ANTIMONY ORE, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONE, COHRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS, TALC, PHOSPHATE OF LIME, &c.

HENRY WIGGIN AND CO.

(LATE EVANS AND ASKIN),

NICKEL AND COBALT REFINERS, BIRMINGHAM.

C. H. WALKER AND CO.,

MINING AGENTS AND ENGINEERS,

VALPARAISO AND SANTIAGO,

CHILE.

SULPHATE OF LEAD AND LEAD ASHES

PURCHASED BY

RICHARDS, POWER, AND CO.,

SWANSEA.

To whom Samples may be sent.

AUSTRALIAN TIN—PRIZE MEDAL, 1877.

THE UNDERSIGNED IS PREPARED TO EXECUTE ORDERS for the

"KANGAROO" and other GOOD BRANDS.

S. L. BENSUSAN.

Kangaroo Tin Works, Sydney, 21st May, 1879.

T. V. CLARKE AND CO.,

TRUNDLEY LANE, SURREY CANAL,

DEPTFORD, S.E.,

ARE BUYERS OF

CALAMINE and BLENDE; ZINC and LEAD ASHES, SULPHATE OF LEAD, and OTHER METAL RESIDUES.

N.B.—Sole Manufacturer of the Palm Anti-Friction Grease and Lubricating Oil for Collieries, Mines, &c.; also the Asphaltic Varnish Paint for coating outdoor Ironwork and Machinery.

Mr. E. JACKSON,

Associate of the Royal School of Mines,

ANALYST AND ASSAYER,

Assays or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and other Ores.

ASSAYING TAUGHT.

106, QUEEN VICTORIA STREET, LONDON, E.C.

ONE HUNDRED PRINCE PATRICK SHARES FOR SALE.

Price 30s. per share. No offer entertained for a less number than twenty-five.—Address, "J. C." care of W. H. Smith and Son, Liverpool.

WANTED, about ONE MILE OF TRAM RAILS (second-hand), about 20 lbs. per yard. State condition and lowest cash price, delivered at Crimmes Road Station, Montgomeryshire, to "A. B. C." MINING JOURNAL, 26, Fleet-street, E.C.

TO FINANCIAL AGENTS.

WANTED, the aid of a few influential gentlemen to assist the Advertiser to FLOAT a VALUABLE LEAD MINE situated in a well-known mining district in Cardiganshire. Success without any doubt certain. For particulars, apply to HENRY MC CHELL, Chalybeate-terrace, Aberystwith.

THE CAPE COPPER MINING COMPANY

(LIMITED).

Notice is hereby given, that at a Meeting of the Directors of this company, held to-day, it was resolved:—

"That a DIVIDEND of TEN SHILLINGS PER SHARE, free of income tax, be and is hereby DECLARED, PAYABLE on the 29th day of September instant, to the shareholders on the books of the company on the 17th instant, and that the Transfer Books be closed during the said 17th instant."

By order of the Board,

J. C. LEAVER, Secretary.

No. 6, Queen-street-place, London, 10th September, 1879.

THE GRIFFIN SILVER-LEAD MINING COMPANY

(LIMITED).

At a Board Meeting, held at the offices of the company, 25, Gresham-street, E.C., on Tuesday, Sept. 9, the Directors passed the following resolution, which they request you to insert in this week's *Mining Journal*.

ROBERT MAKEPEACE, Secretary.

[COPY OF RESOLUTION.]

"It was resolved that the REMAINDER of the FIRST ISSUE of 6000 Shares of this company be NOW OFFERED to the PUBLIC, and the price thereof be fixed at 25 per cent. premium—say, 25s. per share."

25, Gresham-street, E.C., September 9, 1879.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Aug. 30	Bettwy-y-Coed	21	2 9 0	
Sept. 10	Great Dyliffe	40	9 12 6	Sheldon, Bush, and Co.
11	Talargoch:—			
	Maesyrwddu	70	10 6 6	Adam Eytton.
	Coetia Llys	15	10 2 6	Walker, Parker, and Co.
	ditto	15	10 2 6	Quirk, Barton, and Co.
	—North Hendre	50	9 13 0	ditto
	ditto	50	9 11 6	Walker, Parker, and Co.
	ditto (round)	20	11 8 6	Adam Eytton.
	—Prince Patrick	40	10 1 6	Walker, Parker, and Co.
	Rhydalun	10	9 18 6	ditto
	ditto	10	9 16 6	Quirk, Barton, and Co.
	—Fron Hall	30	9 7 6	Walker, Parker, and Co.
	—Wagstaff	15	9 3 6	Adam Eytton.
	—True Blue	10	8 6 6	ditto
	—Roman Gravels	50	9 12 0	Nevill, Druce, and Co.
	ditto	50	9 12 0	ditto
	ditto	50	9 9 0	ditto
	Grogwinlon	100	9 0 6	Sheldon, Bush, and Co.

BLENDE.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Sept. 10	Talargoch	110	3 15 6	Swansea Vale Co.
— ditto		83½	3 15 0	Vivian and Son.
— ditto		37½	3 16 0	Crown Mine Company.

Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

CAPE OF GOOD HOPE RAILWAY.—Reference having been made in last week's Journal to the proposed extension of the Cape of Good Hope Railway, I should be glad if any correspondent would furnish the names of the chief promoters or consulting engineer of the company in England.—E. H.: St. Day.

PRACTICAL MINING.—"W. T." (Bedruth).—There is no method of determining by any simple arithmetical process at what depth the shaft will intersect the lode "when the distance from the outcrop to the proposed point for the shaft, the dip of the lode in degrees and minutes, and the constant multiple to be used is known," because there can be no such constant multiple. The figures given apply when the dip is 1°, and the distance from the outcrop to the shaft is a certain number of miles, but 1745, that is 10.745 x 10 would be altogether erroneous for a dip of 10°, and the greater the dip the greater the error.

SHARE QUOTATIONS.—"H. F." (Glasgow).—Whenever shares are regularly dealt in on the market the exact price at which they can be bought or sold can be readily ascertained, but there are many mine shares which from the small number of holders or other causes are seldom or never heard of upon the market. In such cases the buyer, seller, and secretary are the only persons cognizant of the prices realized, and these alone can furnish quotations. It is the secretary who should be the most impartial to furnish the information, and the secretary should, therefore, be applied to when the prices quoted cannot be dealt at.

WHITE LEAD DIRECT FROM THE ORE.—"H. de C." (Paris).—The white lead of commerce is a carbonate, and several propositions have been made for obtaining it direct from poor lead ore, and also from poor mixed ores of lead and blende. The product was very good in colour, but rather light, and consequently required more care in mixing, &c., than the usual heavier kinds. "H. de C." is quite right in assuming that at the same price it would be much preferred to the lead adulterated with baryta. The sulphoxide of zinc does well as a pigment, because both the salts of zinc in the compound are white; but a double sulphoxide of zinc and lead would never do, because the sulphur salts of lead are black, so that a pigment produced direct, even if practicable, from mixed lead and blende ore would certainly not be saleable as white. Never having seen any of the pigment mentioned, we do not know its character. There have also been wet way processes proposed for treating mixed lead and blende ores, but to reply fully to "H. de C." by giving all details about mixed lead and blende ores would require a volume. He can consult the English specifications of Patents in Paris.

THE ABBEG DRILL.—"N. N."—This drill was fully described and illustrated in the Journal of Sept. 29, 1866; and at the same time some useful information was given in connection with blasting by electricity and other cognate matters.

THE MINERAL STATISTICS OF THE UNITED KINGDOM FOR 1878.—The fourth part of these valuable papers will appear in next week's Journal.

Received.—"M. B." (Riverbank). The letter has been forwarded—"X. Y. Z." in common fairness, should have appended his name to the letter he wishes us to publish. The writer he refers to always authenticates his communications—"A. F."—"M. S."—"E. B. M."—"Shareholder" (East Pool)—"An Auditor"—"X. Y. Z."—"Shareholder" (Penrith)—"C. E. H." We could not publish the lines on the Llanmorris—"Constant Reader" (Bristol).

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

IMPORTANT NOTICE—FOREIGN POSTAGE ON THE "MINING JOURNAL."—Under the Universal Postal Convention the postage of the Mining Journal to many countries has been greatly reduced as compared with former rates. Henceforth the subscription will be 17. 10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Servia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 17. 13s. (50 frs.). Subscribers remitting to the office can in most cases avail themselves of the International Postal Money Order system; those in the United States and Germany should advise their remittance by letter, as the Post Office does not give the sender's name.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, SEPTEMBER 13, 1879.

NORTHAMPTONSHIRE IRONSTONE AND IRON.

Recently a paragraph appeared in several of the daily papers to the effect that a vast field of ironstone has been discovered in Northamptonshire which was likely to revolutionise the iron trade. The writer was evidently not aware that Northamptonshire ore is now well known in all iron-making districts, having been worked for about 25 years, and that it now holds the third position amongst the English counties in which ironstone is raised. From a visit just made to different parts of the county we are able to state that no such discovery has been made, for the stone is known to exist at many places which have not yet been opened out, the works at present in operation being more than equal to what is required. Still the development of the mineral wealth of the county of late years has been something extraordinary, and the history of its progress has been scarcely equalled even by Cleveland, for in three years the output was nearly doubled. In 1855 the quantity raised in the county was 74,084 tons; in 1869 it was 540,259 tons; and three years afterwards in 1872 it had increased to 1,004,093 tons. For this rapid increase a good deal of the credit was accorded to the Mining Journal, for it is stated in the History and Directory of Northamptonshire that it was owing to a series of articles which appeared in the former a few years ago that the value of the stone was made generally known, resulting in the marked increase in the production in a short time. The ore was first raised by Mr. W. BUTLIN, at Wellingborough, and he may justly be termed the Father of the Iron Trade of Northamptonshire. It was afterwards raised at Gayton, Blisworth, Glendon, Heyford, Duston, and in other parts of the county, but it was a long time in making its way into favour with ironmasters at a distance, but its cheapness and the quality found in some districts being rich in metallic iron being known, it soon attracted the notice of the ironmasters of Derbyshire, the West Riding, and various other parts of the country, and we find that whilst the county in 1869 stood the fifth amongst those producing ironstone in 1872 it was second only to Yorkshire. In some places the stone is much richer than in others, whilst it also varies in thickness as well, but not so many years since whilst walking from Blisworth to Towcester, a distance of about four miles, we noticed that the roads were mended with stone containing a good deal of iron, but this is not now the case, for in the locality named the stone is now worked, the top bed being about 12 ft. in thickness, with something like 40 per cent. of metal, whilst there is a lower bed. Not only so, but at Towcester Dr. SIEMENS has put down rotative furnaces for the production of iron and steel by the direct process, although the ironstone for the purpose is not so rich as could be desired. The process is an interesting one as described by Dr. SIEMENS. Two of the furnaces have been working drums 7 ft. in diameter and 9 ft. in length. The gas flame both enters and passes away from the back end of the furnace, leaving the front end available for the furnace door, which is stationary.

The ends of the furnace are lined with bauxite bricks, and the circumference with iron oxides, resulting from a mixture of furnace cinder, enriched with roll scale, or calcined blackband in lumps. Something like 30 cwt. of ore, mixed with about 9 cwt. of small coal, having been charged into the furnace, it is made to rotate slowly for about 24 hours, by which time the reduction of the metal should be completed, and a fluxed slag be formed of the earthy constituents, containing a considerable percentage of ferrous oxide. The slag having been tapped, the heat of the furnace and the speed of rotation are increased, to facilitate the formation of balls, which contain on an average 70 per cent. of metallic iron and 30 per cent. of cinder, and it has been found that the particles of iron, if entirely separated from the slag, are pure metal, although the slag may contain a good deal of both phosphoric acid and sulphur. In shingling the balls in the usual manner the bulk of the cinder is removed, a sufficient residue remaining to impart to the fractured surface a dark appearance, without sign of crystallisation. In re-rolling and re-treating the iron several times the defective appearance is gradually

removed, and crystalline iron of great purity and toughness is produced. Another and more ready treatment has been suggested. The balls as they come from the rotator are placed under the shingling hammer, and beaten out into flat cakes, exceeding an inch in thickness. These are cut into pieces of suitable size, and formed into blooms of about 2 cwt. each, which are consolidated under a shingling hammer and rolled into bars. Close to the works at Wellingborough rolling-mills were also partly built, but for some reason or other they were not completed, although there can be no doubt but it would have paid to roll the iron from the furnaces close at hand. A large quantity of the stone raised between Wellingborough and Market Harborough goes into Derbyshire, having been forwarded by lessees, but during the last two or three years some of the iron companies have found it more advantageous to work the ore on their own account. The Stanton Company, who have works near to Nottingham, and where there are eight furnaces, raise the ore from land leased direct, and send over the Midland close upon 200,000 tons a year. From Blisworth also a considerable tonnage is sent into South Wales, there being a line of railway, which goes to Stratford-on-Avon, to which there is communication with Worcester. Stone is also obtained near to the London and North-Western Peterborough branch at Ringstead, Thrapstone, &c.; near to the latter are some furnaces built by Mr. PLEVINS, a well-known colliery owner in Derbyshire. The Heyford Iron Company, who have three furnaces near Weedon, raise a good deal of stone at Gayton, a small place near to Blisworth, whilst the Glendon Company, with five furnaces at Finedon, about a couple of miles distant from those at Wellingborough, also work an extensive tract of mineralised ground. The latter company has also a colliery in Derbyshire for supplying fuel for their own furnaces. Much, however, as the ironstone has been worked of late years there is still an almost inexhaustible quantity left, for there are many districts as yet untouched. As to the progress made, it will be seen as regards the leading centres by the undermentioned figures, showing the quantities raised in 1869 and 1878:—

	1869	1878
Brixworth	9,545	17,239
Blisworth	61,117	16,114
Crauford	—	40,000
Cransley	—	95,000
Cogenhoe	35,000	3,000
Desborough	—	128,752
Gayton	46,575	63,867
Irthlingborough	—	26,905
Glendon	80,000	130,000
Burton Latimer	—	25,000
Islip	25,000	50,000
New Bridge	—	59,490
Ringstead	—	32,142
Woodford	65,440	50,000
Duston	110,696	13,492
Thrapstone	—	19,670
Kettering	—	24,666
Wellingborough	106,886	286,564
Other places	—	107,542
Total	540,259	1,189,443

Desborough is a comparatively new district near to Market Harborough, and in that locality a few years ago the site for four blast-furnaces was fixed upon, and there is every reason to believe they will ultimately be erected. But the increase in the production of ore in Northamptonshire has been most actively stimulated by the Midland Railway Company giving a moderate rate for its carriage into Derbyshire and the West Riding of Yorkshire. This rate, indeed, has been such that during the greatest depression in the iron trade the consumption of the Northamptonshire ore has gone on increasing irrespective of the decrease in the production of pig-iron. Of this we have a striking example in the fact that a much larger tonnage of ironstone passed over the line last year, when trade was so bad, than there did in 1872, and two or three following years. From the returns it would appear that the Derbyshire makers of pig in particular are able to purchase stone from Northamptonshire cheaper than they can raise it close to their furnaces, despite the carriage rate. The tonnage of Northamptonshire ironstone that passed over the Midland during 1872 and 1878 was as follows:—

	1872	1878
Desborough	56,115	119,527
Rushton	71,312	116,153
Kettering	20,771	33,793
Melton	—	54,826
Crauford	21,920	53,955
Twywell	186,621	143,034
Thrapstone	—	19,709
Isham	—	2,913
Wellingborough	277,544	336,604
Irchester, &c.	47,515	17,868
Total	681,798	898,384

In addition to being one of the most prolific sources of the iron ores of the kingdom, the production of pig in Northamptonshire has gone on increasing from year to year, for whilst in 1868 there were only eight furnaces in the county, one half of that number having been at Wellingborough, there are now 20, in addition to the rotary furnaces at Towcester. In 1868 the production of pig was 35,584 tons, giving an average of 4448 tons for each furnace. In 1871 there was an extra furnace, nine being in blast, and the output was 60,512 tons. In 1876 the output was 84,916 tons, and in 1878 it was 138,370 tons. There was thus an increase in ten years equal to nearly 400 per cent. in the production of pig. During the past year the largest quantity was turned out at the works at Finedon, belonging to CHECKLAND and FISHER, better known as the Glendon Iron Company, who had five furnaces in blast, two of them having been erected in 1876. The value of the ironstone, it may be stated, is rather less than 3s. per ton. At the present time the output of stone is kept up close to the average, although the consumption at some of the works in Derbyshire is not equal to what it was. It will, however, be seen that of late years Northamptonshire has made great progress in the development of the minerals that are found in such abundance in various parts of the county, and with a revival of trade will show to still greater advantage. The production of pig also increased in a marked degree, and this is all the more surprising considering that the fuel for smelting has to come from a considerable distance. The Midland, however, give every facility for transport as well as a fair rate, and to this may be attributed the exceptional position of Northamptonshire as regards iron and ironstone.

EXPORTS OF COAL.

As everything connected with the coal trade at the present time is of more than ordinary importance, owing to the conflicting views entertained by masters and workmen as to the best means that can be adopted for its improvement and for increasing the price, some information on the points raised may be deduced by a study of our exports. On one side we are told that the value of coal can only be enhanced by limiting the production, whilst on the other it is insisted upon that to do so would simply be to give up a considerable proportion of our foreign trade which would be irrecoverable in the future. When we consider that nearly one-ninth of all the coal raised in the United Kingdom is sent abroad the importance of our exports will be recognised by all unbiased persons. Yet it is entirely owing to the comparatively low price at which we have sold our coal in the continental markets in particular that we have been able to maintain our hold upon them, but during the present year the competition between our coalowners and those of Germany has become keener than ever, and the latter have received a great deal of encouragement from their own Government, which is doing all it can to promote the consumption of home coal. For years past Germany has been our best customer, but of late there has been a falling off in the exports to that country, and last month we only sent there 236,272 tons of coal, against 295,829 tons in the same month of last year. Germany is also sending coal into the North Sea, so that our exports have fallen off in that direction considerably. In August Sweden took from us 96,000 tons less than in the same month of 1878, whilst there

was also a falling off in the tonnage sent to Holland of late. Taking last month our entire exports of coal were 1,678,991 tons, against 1,686,285 tons in August, 1878, or a decrease of 7294 tons. This looks a serious matter, for our exports have always gone on increasing, whilst in August last the average price of the coal sent to foreign ports was only 8s. 6d. per ton, against 9s. 4d. for August, 1878. By taking the eight months, however, there has been an increase over the same period of 1878, the respective quantities being 10,663,099 tons and 10,731,552 tons; but the returned value of the larger tonnage was 7.1 per cent. less than of the lesser. This shows the difficulties that have to be encountered in maintaining the foreign trade. Up to the end of August Russia took from us 897,305 tons, against 973,473 tons in 1878; whilst Sweden, Norway, and Denmark also show a falling off. On the other hand, Germany imported during the first eight months of the present year 1,271,642 tons, against 1,239,247 tons in the corresponding period of 1878. France also increased its tonnage from 2,061,246 tons in 1878, to 2,147,143 tons in 1879. During the same period Italy also increased its tonnage from 754,787 tons to 945,036; Spain and Canaries from 525,136 tons to 569,191 tons; and British India from 474,213 tons to 478,808 tons. The moderate increase during the first eight months of the present year of 98,453 tons over the same months of 1878 must have entailed some loss to colliery owners, otherwise the same amount of business would not have been done, for sales were only effected by a reduction in the price of from 5d. to 6d. per ton on the rates of the latter period. Now, had the production been limited, as so many are now crying out for, the result would have been a great decrease in the quantity of coal exported. Were other countries entirely dependent for their supplies of coal on Great Britain it would be very different; but they are not, and that makes all the difference. So long as we have competitors combating with us in foreign markets it is absurd to talk about not supplying coal unless at a price fixed by exporters, for we all know that consumers, large and small, will buy in the cheapest markets, and that English colliery owners will not have any preference over others unless they can show some advantage to purchasers—and so far that advantage has been the low price.

THE AMERICAN COAL TRADE.

The coal trade of Pennsylvania—which is virtually the coal trade of the United States—exhibits signs and symptoms of having, in homely language, been overdone this year. The aggregate extraction to Aug. 9 this year was estimated at 17,069,452 tons, as compared with 10,664,597 tons in the corresponding period of 1878, showing an increase of 6,404,855 tons this year; and this overwhelming increase has fairly swamped the market. It is true that the extraction of 1877 and 1878 was reduced by strikes, riots, and exceedingly bad and difficult times; but the recovery this year has been too sharp and rapid to admit of the production being readily absorbed, although there has certainly been a decided revival in many American trades. An advance of 25 cents per ton was certainly established some little time since upon the New York market, but this advance had nothing real about it; it did not repose upon any solid, tangible formation, and it disappeared last month for good and all. Hence we find Mr. ABRAM S. HEWITT, a Congressman of some repute, observing—"Coal alone has not advanced. The reason is unusual. It is because producers have a capacity of putting coal on the market far in advance of the demand. Hence coal cannot go up." Or, as we have put the matter, the Pennsylvania coal trade has been overdone.

The production of coal in Pennsylvania this year appears likely, indeed, to be utterly unprecedented. At the present rate of extraction it will not be less than 25,000,000 or 26,000,000 tons, while the largest extraction previously attained in any one year was 21,000,000 tons in 1873. It is interesting to note the early stages of this now important branch of Pennsylvania trade. The Lehigh Coal and Navigation Company began shipping coal from the Lehigh region in 1820, and two years later shipments from the Schuylkill region were commenced. In a very few years the larger percentage of coal came from the latter region; and in 1829 the Wyoming region was opened, contributing about 6 per cent. to the production of that year. Wyoming now supplies nearly one-half of the whole coal production of Pennsylvania, which increased from 365 tons in 1820 to upwards of 21,000,000 tons in 1873. The region first opened—the Lehigh—now furnishes the smallest contingent of the total production from the three regions, while the region last opened—the Wyoming—now heads the list. It is wonderful to note the progress of Pennsylvania coal mining during the last 60 years. From 365 tons in 1820 to 26,000,000 tons in 1879 is certainly a most remarkable advance.

Nevertheless, it may be reasonably expected that the coal-mining industry of Pennsylvania has not yet acquired its full development. In exact proportion as the United States become more and more a manufacturing nation so they will consume more and more coal, and in that case they will become better and better clients of the Pennsylvania coal trade. Certainly, Pennsylvania cannot expect to supply coal to the whole territory of the United States; but the railroad system radiating from Pennsylvania is so extensive that Pennsylvania coalowners may reasonably anticipate a widely extended connection. But, great as has been the progress of production in the Pennsylvania coal trade this year, we fear that the result is not satisfactory from every point of view. Selling prices have been forced down to a very low point, and it is only too true that the coal-owners of Pennsylvania have been scrambling this year for a share of very small profits. Should the production experience some check next year it may not be a misfortune, but quite the reverse, as prices may acquire in consequence a little more strength and steadiness.

THE UNITED STATES—IMMENSE ACTIVITY IN THE CONSTRUCTION OF NEW RAILWAYS, &c.

The present year witnesses the successful beginning of more railway enterprises than have been known for eight or nine years in the United States. There is a notable increase in the importations of rails from Great Britain, the amount imported rising for six months from 464 tons in 1878 to 7738 tons in 1879. This increase comes from the immense demand for rails at the present time. Indications are favourable for the early extension of our railway system with a magnitude that will eclipse all former eras. Everything is propitious for the building of railways, labour and materials are remarkably cheap, and there is an abundance of idle capital. The directors and stockholders of the Texas and Pacific Railway Company have undertaken the completion of the road from Fort Worth west to the Pacific coast, a distance of over 1200 miles, and have augmented their capital for the prosecution of the work, which will cost over \$24,000,000. In Kansas, one of the most rapidly developing Western States, there are now on contract and partially completed 665 miles of railway. The Northern Pacific Railway, which came to a standstill in 1873, has suddenly taken on new life. In June last the stockholders subscribed to a loan of \$2,000,000 to be applied to the extension of the line from Bismarck to the Yellowstone, 200 miles; 130 miles were put under contract, to be completed this season. This will carry it to the Little Missouri river. The remaining 70 miles will be ready for the iron early in the spring of 1880. The directors have also taken measures for the construction of the line eastward from the Columbia 200 miles, at an estimated cost of \$2,000,000, and the entire amount has been taken by the stockholders; 10,000 tons of steel rails have been contracted for, to be delivered during the coming winter. Engineers are locating the line, which will soon be put under contract. There is no reason why the company may not push the line up the Yellowstone to Bozeman (300 miles) to the very heart of Montana during 1880. The amount of capital required can be secured without difficulty, for capitalists and common people alike are beginning to see that the North-West is an empire of itself, and that it is to have a great and rapid development. Besides these Western lines of roads the Central, Eastern, and Southern States have all their respective railway enterprises well under way, involving an outlay in the aggregate during the next twelve months of at least 20,000,000 sterling, so that very large orders for English iron and steel rails will doubtless be coming forward. The Texas and Pacific Railway Com-

pany will open up a very rich and extensive territory throughout the South-West. The State of Texas is about as large as France, and is rapidly filling up with a very enterprising class of settlers. It is estimated that this year 200,000 will be added to her population.

CAKEMORE, CAUSEWAY GREEN, AND LOWER HOLT UNITED BRICKWORKS AND COLLIERY COMPANY.

When first this undertaking—then comprising a comparatively small mining area and some diminutive and old-fashioned brick machinery—was started by the present proprietors it was looked upon almost with contempt in the neighbourhood, and prognostications of "the strangers' failure were both loud and numerous, but now all that is changed. Enough having been done to effectually prove the value of the property it has been slowly but surely extended and developed, until the mining area—of which about six-sevenths are in the maiden state as to the "Ten-yard" or "Thick-coal" seam, and almost entirely intact as to the Heathen coal, and other seams of ironstone and fire-clay—has now nearly quadrupled, while the extensive brickmaking plant, erected regardless of expense, and with all the latest improvements, is acknowledged by practical authorities to be one of the best—if not the best—ever put together, and is turning out bricks up to about 200,000 a week, with (it is believed) greater rapidity and cheaper than any other works in existence. The quality of the bricks, also, whether red or the celebrated South Staffordshire blue bricks (of which the bulk of the make now consists) is simply perfect, as can be seen in the numerous buildings in which they are being used for the Birmingham Corporation, the Local School Board, the Great Western and London and North-Western Railway Companies, the Birmingham Canal Company, and many others of similar standing, where they have in every case been highly approved. The best test of all, however, is the rapid sale, at good prices, of so large a make, even though carried on continuously week after week throughout the year, not merely for a month or two in the summer like open-air brickmaking.

It will give some idea of the magnitude and perfection of the brick machinery to mention that although the make does not now exceed 200,000 a week the cutting off, or brickmaking portion of it, is fully up to a capacity of 300,000 a week, while the kilns—all of which except one are covered in and arched for burning blue bricks—will hold 425,000 bricks at a time, and the drying-floors—all laid throughout with iron plates, and flued underneath—comprise a total area of about 24,000 ft., and that only about four minutes elapse from the time when the marl is brought up the incline from the marl-hole until it is laid upon the drying-floor in the shape of a green brick (then requiring only to be dried and burnt), it having in the meantime passed through six different processes of crushing, grinding, pugging, and moulding without being touched by hand, issuing, in fact, from the last process in a continuous stream of clay, from which seven bricks are cut off at each stroke. With brickmaking brought to such perfection, and having an endless supply both of the raw material and coal required for kiln-burning on the spot, and with a colliery turning out about 200 tons of coal per day, and able—owing to its freedom from water, low royalty, and other special advantages—to do that at a profit even at present low prices, this industrial undertaking seems bound to pay; indeed, those who are best acquainted with its capabilities go so far as to prognosticate a 20 per cent. dividend; and, sanguine as such an estimate may appear, it is by no means an unusual profit in successful examples of either of the two trades it so opportunely combines. At any rate, it has every chance of doing what has been constantly done in private hands; for, although registered as a joint-stock company, in order to avoid partnership responsibility, the undertaking is apparently conducted on the same principles as a private business, the directors (who are all practical men, and with their relatives and friends hold a large stake in the concern) having hitherto taken no fees—nor, indeed, is there any stipulation in the Articles of Association for any payment other than what the shareholders may choose to vote; neither are there any appointments secured by the Articles, all the officials being appointed solely with regard to their respective capabilities; while the directors, and those of the principal shareholders who have from time to time visited the property, have always done so at their own expense; thus the nepotism and heavy expenses which have so often brought joint-stock companies to grief have in this case been most carefully avoided.

Another important point is that the company is not overladen with capital, it being stated that the extensive brick and colliery plant and the work done have from first to last cost (and are worth) more than the whole capital of the company, and that consequently the large premiums (estimated at upwards of 100,000*l.*), which might fairly be charged for the extensive reserves of coal and marl proved and laid open, will naturally accrue to the shareholders in the shape of the increased value which their shares must command as this becomes more known. There is great credit due to the Chairman and other directors for their indefatigable exertions in obtaining a reduction of the railway rates on bricks from that county to London, which (almost entirely owing to their influence and energy) have been reduced during the last 12 months from 9*s.* 6*d.* to 6*s.* 8*d.* per ton. The undertaking appears, in fact, to have reached a stage in which its future operations will mainly consist of treating and sending to market as rapidly as possible raw materials, which have been proved to exist in almost inexhaustible quantities, and to be readily marketable, and it is considered impossible that an undertaking arrived at that point and so conducted should not pay handsomely.

THE ELECTRIC LIGHT USED AT A BALL.—Last week a number of the prominent townspeople of Milford Haven attended a ball at the Lord Nelson Hotel, the invitations to which were given by the engineers of the Milford Dock Company, and of the contractor executing the work. The ball-room was brilliantly and attractively lighted with electricity supplied from a Gramme machine, and by placing an inverted "bonnet" under the light its intensity was moderated through reflection and diffusion from the ceiling. All present expressed themselves delighted with this novelty of lighting arrangement at parties. Only one change of carbons had to be made. The light was supplied by the British Electric Light Company, who have two machines in use on the graving and other docks now being constructed at Milford Haven. The graving dock is the largest in the world, and will accommodate such vessels as the Great Eastern and our heaviest ironclads. It is expected that when the docks are completed early next year trade with America of considerable importance to Wales will immediately be inaugurated.

PROTECTION OF SHIPS FROM FIRE AND SINKING.—The Society of Arts have determined to offer the Fothergill gold medal and two silver medals for the best suggestions for protecting ships from fire and sinking. It is announced that the receiver of the first silver medal may receive also the second, if the means proposed be deemed the best for each of the two objects considered apart from each other, although not deemed the best means of attaining the two objects combined, to which alone will the gold medal be awarded. For preventing sinking after collision, or grounding, preference will be given to structural arrangements occupying least space, least interfering with stowage, least obstructive to free ventilation, and least expensive; and to appliances least unsightly, most readily got into use, and least expensive. Competitors are at liberty to draw a distinction between structural arrangements and appliances most suitable to men-of-war, to passenger ships, to ordinary merchant ships; also between the different circumstances attending accidents by day and accidents by night. As to protection from fire, preference will be given upon similar principles, and will also be given to appliances which are least expensive, which occupy least space, which are least liable to injury, and which are most trustworthy. Competitors are at liberty to draw a distinction between structural arrangements and appliances most suitable to men-of-war, to passenger ships, to ordinary merchant ships; also between the different circumstances attending a sudden alarm of fire by day and sudden alarm by night. Models or drawings of structural arrangements, or of appliances, must be sent in not later than Jan. 1 next, addressed to Mr. H. T. Wood, the secretary of the Society of Arts, and must in every case

be accompanied by a short description. The council is at liberty to withhold the medals if, in the opinion of the committee, nothing is submitted worthy of the award.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Sept. 11.—A few of the Cannock Chase coalowners (who raise house coal) have since my last report put up their prices 1*s.* a ton on deep coal, and 6*d.* a ton on shallow sorts. This action has not, however, at present become general. The chief concern for example—the Cannock Chase Coal Company—has not made any announcement of higher rates. The wages of the colliers, where the advance has taken place, should now go up if the sliding scale arranged by Mr. Joseph Chamberlain, M.P., five months ago, is adhered to, since the agreement then drawn up laid it down that holers' wages should advance 1*d.* per day on every 6*d.* per ton rise on the average price of deep and shallow coal. The colliers in the manufacturing districts of South Staffordshire are pushing on their agents to agitate for the declaration of higher prices by the South Staffordshire Coalmasters' Association, so that they may be benefited, and a meeting of agents and delegates is to be held to consider the question. But the men are very unwise in taking this course, as the improvement in trade is at present but slight. The iron trade maintains the better feeling lately observable. At the meetings of the ironmasters in Wolverhampton and Birmingham this week fresh orders for pig and finished products were placed in good numbers. A rise of from 2*s.* to 3*s.* was secured upon some brands of good pigs. Orders far ahead were generally declined. The sheet makers reported continued activity. Messrs. G. Adams and Son, of the Mars Ironworks, Wolverhampton, have booked an order for 1000 tons of bailing hoops. The galvanisers were generally securing the full advance of from 2*s.* 6*d.* to 3*s.* a ton. One Birmingham firm has advanced prices a further 1*l.* a ton. Common bars, particularly of South Wales make, were stronger, because of the greater scarcity of old iron rails. An advance of from 5*s.* to 7*s.* 6*d.* per ton was asked by some producers.

Difficulties that had arisen touching the carrying out of the scheme determined upon a month ago by the South Staffordshire Mines Drainage Commissioners for the pumping of the mines in the Tipton district, were removed on Wednesday at a special meeting of the commissioners in Wolverhampton. The Tipton engine of the Earl of Dudley and the Horseley engine of Mr. Edward Howl will now be put to work, together with the engine of the Moat Colliery Company, started a few days ago, will do great service. The commissioners have also the offer of the engine of the Bradley Colliery Company (Messrs. Wilkinson's trustees) on favourable terms. Serious news was, however, communicated by the Chairman, who reported that the stopping of certain of the engines which up to three months ago the commissioners had worked, had led to a complete drowning out of the extensive colliery of his firm, Messrs. Phillip Williams and Sons, who contributed one-eighth of the entire rates of the Tipton district. It was determined to guarantee Messrs. Williams 600*l.* upon the deferred payment principle if the commissioners of the firm would commence to reopen the workings. The commissioners also undertook to repay Messrs. Williams the cost of working the Bradley engine on the same terms.

An accident occurred at the Big Pit on Earl Granville's works at Fir Green, Hanley, on Saturday. As the cages were being wound, by some misunderstanding they came into violent contact, and were locked together. Considerable damage was done to the workings, but fortunately the cages were empty. Between 400 and 500 colliers who were down in the pit were imprisoned for seven or eight hours, many not being got out till after midnight. As the news of the accident spread, large crowds of women and children assembled at the pit's bank. Towards midnight, however, the damage was temporarily made good, and the men were drawn out, none the worse for their imprisonment, except from hunger and alarm. It is estimated that the crowd at this time numbered over 3000.

The strike of the colliers in North Staffordshire, which has been going on some five weeks, may be considered as almost at an end. The men, with the exception of those employed by Messrs. Stainer and Co., have resumed work at the old rate. A deputation of the men waited upon Messrs. Stainer, and offered to accept a 5 per cent. reduction, but the offer was declined. Some of the mills are running full time, but the improvement which was noticeable a few weeks ago is not so well maintained. Prices are firm, and manufacturers refuse to enter into large contracts for extended delivery, and the piddled bar trade is improved. In consequence of the competition from the North of England some of the plate mills are standing. Pig makers are doing more, and some fair orders have been secured.

REPORT FROM CORNWALL.

Sept. 11.—When the news was received of the deplorable affairs in Cabul, and the effect on the Money Market was manifested, it was commonly held that a check in the upward progress of the tin standards would follow, and that all that could for the time be anticipated would be a maintenance of the substantial improvement alike in tin and copper with which we have been favoured. However, we have been very agreeably disappointed, and a further rise of 3*l.* in the tin standard yesterday gives us a total rise of 10*l.*, and places it within the power of a very large proportion of our mines to pay dividends, while few comparatively of those which have weathered the storm cannot now pay costs. Under the circumstances, we regard the last advance as still more hopeful for the future. There is quite a revival in the Tavistock district in connection with Wheal Crebor, which some hold is likely to turn out a second Devon Consols. Whether that be so or not, however, the mine has every prospect of permanence, and shares which a few months since were at 2*s.* have been now sold at 6*s.*

Remarks have been recently made in disparagement of the Cost-book System, to which we should not call attention were it not really a matter of public interest, and one which particularly concerns outside adventurers, that the character and results of this system should be fully understood. In doing this we are only indeed repeating what we have had occasion again and again to say. There is nothing easier when things go wrong to abuse what is handiest, but the process is often very unsatisfactory for all that. In theory nothing can be fairer than cost-book mining, for it divides all the outlay and all the profits equally among the adventurers, according to their holdings, and it provides against the contingencies that will occur in mining as well as in other matters by having what is practically an unlimited reserve of capital in the power to make calls. Here, however, is just where the shoe pinches. We are not attempting to deny that cost-book working may be abused, just like anything else may be; but we wholly deny that unless the law is openly and flagrantly violated, in which case there is of course a remedy, the Cost-book System is no more open to abuse than any other. The truth is, a lot of people who know nothing whatever about mining rush recklessly into it—as a rule when prices are high—they never attend meetings or look after their property in any way, and then if disaster comes blame anybody rather than themselves. No business will be conducted satisfactorily in this fashion. But if the Cost-book System is done away with, as some argue, what are we to put in its place? There is only one answer possible, for only one other thing has been tried, and a more egregious failure (with a very few exceptions) than to attempt to work mines on the limited liability principle the world has never seen. The amount of money that has been wasted in limited liability mining is enormous, and considering the period over which it has been in operation we have good reason to believe far exceeds the losses in cost-book mines. The fact is it is calculated only for smooth water; directly a period of depression comes the reserve of capital, generally a very small modicum (especially if dividends have been paid out of it), is rapidly exhausted. It is found impossible to reconstitute, and the whole concern goes to the wall, when, perhaps, the power to make a slight call would have put it on its legs again. There may be, and probably is, room for limited liability in mining, but by no means as a universal rule, and under other than the ordinary conditions. Here as in other things—"By their fruits ye shall know them." The pressure of the past few years has proved limited liability mining here an utter failure,

the most broken of all broken reeds. The Cost-book System taking all its drawbacks has kept mining alive; indeed but for it, instead of once more looking out on a bright future, western mining would be a thing of the past. It is an old and true proverb that men should speak well of the bridge that has carried them safe over, and if people are reckless in their investments and careless of their own interests, surely the first to be blamed is themselves. Cost-book companies have had their faults, but as limited ones have been too often worked the limitation of the liability to loss has been made a practical certainty that the loss would follow. Enough, however, for the time on this head.

It will have been seen that the suggestion made at the recent meeting of the Polytechnic Society that a committee should be appointed to enquire into the explosives best suited and most economical for use in Cornish mines has already borne fruit, in so far that it has been taken up by the Miners' Association; and that the two bodies are likely to appoint a kind of joint commission. This is a very important matter, one of which, indeed, it is hardly possible to exaggerate the importance under the present conditions of mining operation—the rapid drivages and sinkings, and the consequent largely increased use of explosives. It is to be hoped that the committee will lose no time in getting to work. It is a good augury that the President of both societies is at present Mr. Richard Taylor, whose world-wide experience in all mining matters is well known.

There is a good deal of what we may call "quiet mining" going on in Cornwall and Devon at various points, private speculations of which the public never hear anything, but which in some cases have turned out exceedingly profitable, and not unfrequently have pioneered the way for other and larger concerns. One of those private speculations is now in operation at Greston, or Greystone, not far from Launceston, where a silver-lead mine opened many years ago, and then carried to a very shallow depth and abandoned, has been taken in hand by a couple of London gentlemen, and is now yielding good returns of galena, worth for silver some 35 *ozs.* to the ton. The conditions of the mine appear to be very favourable, and the prospects excellent; and the extension of mining operations so far in this direction is a fact also worth noting.

ANOTHER ADVANCE IN THE TIN STANDARDS.—We are glad to announce another rise in the tin ore standards, to the extent of 3*s.* per cwt., making altogether an advance of 10*s.* per cwt. since Aug. 11. This makes an increase of about 6*l.* 5*s.* per ton of black tin, and will considerably add to the receipts of the Cornish tin mines. We referred last week to the fact that the shipments of Australian and Tasmanian ores had fallen off in the last eight months of this year no less than 1894 tons as compared with the shipments in the same months of last year, and we do not hear that there is any probability of the Australian shipments increasing. The probability, it is said, lies the other way. Even the Mount Bischoff production, in Tasmania, of which so much has been said, is now reported to be near its period of decline. A gentleman in West Cornwall sends us the following extract from a letter received this week from Australia, and dated July 10:—"I saw a person last night who had a letter from Tasmania about the Great Bischoff Tin Mine. They are now sending away about 250 tons per month, but that cannot last longer than this year out, as they can see the whole of it. The tin is formed like a large layer against the side of the mountain, and they have as yet no indications that it will make in depth." We observe that the smelters yesterday advanced the price of English tin to 75*l.* per ton for ingots.—*West Briton.*

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Sept. 11.—There has been but little change in the state of the Iron and Coal Trades of Derbyshire during the past week or ten days. It may, however, be stated that there is every appearance of an improvement taking place in the demand for both pig and manufactured iron. Steel rails also continue in fair request at the works at Driffield. The coal trade has kept up fairly so far as relates to household qualities, and the traffic with the Metropolis has but slightly declined of late. Unfortunately prices do not move upwards, so that the business doing leaves little or no profit to the colliery owners. Derbyshire coal is now sold and delivered to consumers at 19*s.* per ton, so that the pit price must be a very low one. In steam coal there has been no material improvement of late, and less has been done in it than is usual for the time of year. The shipments during the whole of the summer have been particularly moderate, and the rate at which sales have been effected have been beneficial only to railway companies and merchants. Gas coal is beginning to move off rather better, but this is only according to the contracts entered into earlier in the year. Makers of coke have been able to sell more freely, a good deal being sent to Sheffield and the district for smelting.

In Sheffield the improvement noticed a fortnight since has been up, and no doubt will be to the close of the year. Nearly all workmen are much better off than they have been since the commencement of the year. There has been an increased consumption of pig, and prices of the finer qualities for steel-making have gone up. Bessemer rail makers are well employed, and will be for some time to come, for there are some large orders in hand, and others are expected. A little more is also being done in other descriptions of railway material, such as tyres, axles, and wheels. Orders are being received from America for cutlery and other goods, whilst our own colonies are becoming better customers. The home markets are also showing signs of activity. Rolled iron has improved in request, and some of the largest works are now favourably off for business. No material change has taken place with regard to foundry material, stoves and grates being in but moderate request, owing to the slackness of building operations. In the Rotherham district some of the establishments are doing more, and it may be said with regard to Sheffield and the district that a healthier tone pervades all classes as to the future, still there are many houses uninhabited.

The question of the rates for the carrying of coal to London from the Midland field is being now discussed, and it is proposed to present a memorial to the House of Commons in the next session, praying for a Royal Commission on the subject. Such being the case a brief notice of the coal traffic by railway to London may not be out of place at the present time.

A falling off in the tonnage of coal taken by railway to London in September, as compared with the previous month, is scarcely what might be expected, but of late changes and fluctuations have been more frequent than usual. It appears that last month there was sent by railway to the Metropolis 17,308 tons more coal than in August, 1878, whilst in the same period there was forwarded by water 22,702 tons more, although the carriage by railway is about twice what it is by sea. This, again, brings up the question of the carriage rate by railway as compared with that by sea, which is shown to be greatly in favour of the latter, and hence it is that several schemes of late have been brought forward for conveying coal from the West Riding of Yorkshire in particular entirely by water to the Thames by means of boats and screw-steamer fitted up with powerful hydraulic appliances for loading and discharging. The present rate for coal going from the Tyne to the Thames in screw-steamer is 4*s.* per ton, whilst by the Great Northern from South Yorkshire in company's trucks the charge is 7*s.* 11*d.* per ton of 21 cwt., exclusive of city dues. This of course shows plainly enough that the sea carriage is by far the cheapest, and it has been proposed to take the coal from Yorkshire to Boston Deep, or to the Humber, and thence ship it in fast steamers and discharge at Sheerness or some other convenient point. Mr. W. J. Thompson, of London, who is well acquainted with the home and export coal trade, has during the last few days again drawn attention to the subject, and states that he is prepared to show to the owners of collieries not contiguous to the Aire and Calder Navigation, nor even the Trent, that quite independent of its being optional to ship in sacks or in bulk by means of a non-patented but proved system of road traction over an undulating country to the water, their out-put can be delivered without recourse to steam at considerably under the rate they are at present paying by rail.

Some such system is what our colliery owners now require, seeing that the frequent applications made to the directors of the Great

Northern Railway for a reduction of the rate have been made in vain. Owing to this there has been a serious falling off in the tonnage of coal from the South Yorkshire collieries which are connected with the Great Northern by means of its feeder, the Manchester and Sheffield. This is shown by the returns recently issued, for from them it appears that the Great Northern took from South Yorkshire to various places in 1877 a total of 835,883 tons, and in 1878 only 755,808 tons, showing a decrease for the year of 80,075 tons. Yet from Derbyshire the Great Northern carried 89,217 tons more in 1878 than in the previous year, and from West Yorkshire 125,497 tons more last year than in 1877. The Midland takes principally from the collieries in Derbyshire and Notts, through which the line passes, as well as from a few in the West Riding directly connected with the line; and so far as the metropolitan traffic is concerned far outstrips all the other companies, the rate being lower than that charged by the Great Northern from Yorkshire. The London and North-Western still holds the second place, intersecting several fields of coal, taking largely from Lancashire, Staffordshire, and South Wales, and also favouring several collieries in the West Riding as well. The Great Western devotes itself principally to what may be termed its legitimate field in South Wales, whilst the Great Eastern, having no direct connection with any coal district, obtains its supplies mainly by means of the Midland and other lines from Derbyshire and Yorkshire. The Great Northern is nearest to the South Yorkshire collieries, some of which are only some six or seven miles from Doncaster, but the company seem to pay more attention to other districts. The traffic passing over the various lines to the Metropolis during the last three months will be seen from the following figures:—

	June.	July.	August.
Midland	142,886	158,052	148,763
London and North-Western	124,132	113,246	107,823
Great Western	81,851	73,571	87,157
Great Northern	69,432	90,094	73,030
Great Eastern	43,749	44,729	48,127
London and South-Western	5,135	3,951	4,018
South Eastern, &c.....	1,607	2,889	1,391
Total	471,782	486,532	470,309

The Yorkshire Geological and Polytechnic Society held their annual meeting at Skipton, on Tuesday, and visited the Raygill Limestone Quarries to inspect the great fissure in the rock in which a quantity of mammalian bones were found, great interest attaching to them because they differed from most cave deposits in this country. A dinner preceded the business meeting, at which the report, including in the obituary one of the gentlemen present, was read, showing 3l. 11s. 6d. balance in hand, and the Chairman (Mr. Walter Morrison) regretted as a member of the University of Oxford the failure of the English Universities to produce any good or great work. Looking back during the last century he could not recollect any first-class work done except in the region of pure mathematics by men resident at the University. The most important paper was that on the Midland Coal Field by Mr. Arnold Lupton, C.E., F.G.S., instructor in Coal Mining at the Yorkshire College. He said that the most remarkable feature in the Midland coal field appeared to him to be the great similarity in the nature of the seams of coal in the north and south. There appeared to be a thinning out of the rocks towards the south, but the seams of coal retained the same thickness on the average. Among the other papers read was one by Mr. J. R. Eddy on the Lead Veins in the Millstone Grits near Skipton.

TRADE OF THE TYNE AND WEAR.

Sept. 10.—The Coal and Iron Trades here, on the whole, are improving; the process is slow, but it is considered to be a fact, and there is certainly more confidence in business and commercial circles. The steam coal trade in Northumberland continues to show signs of increased activity, and most of the works are fully employed. It is fortunate that this change has occurred, as it will, no doubt, shortly again bring into operation those works that have been closed owing to the depression. The gas and house coal trades improve as the season advances, and the best gas collieries will be fully employed up to Christmas; on the whole, second-class works are better employed than they have been during the present year. Some improvement has also taken place in the demand for fire-bricks and fire-clay goods of all kinds. Of course low prices are still generally complained of in all these trades. We learn from Brown's Export List that the exports from the north-eastern ports for the past month considerably exceed the exports for the same month last year. This is the case at nearly all the shipping ports on the coast, and especially at the larger ports.

The Elvet Colliery, near Durham, has been partially flooded; some drifts were going into part of the coal field, supposed to be entire, but suddenly a holing was made into old workings, and the water entered rapidly—fortunately the men were able to escape. It is uncertain when the water can be removed from the invaded workings. Shortly after this water was run off serious falls have occurred up to the surface, and fears are entertained of damage to important buildings. The Seaton Delaval Company have been engaged sometime in making a new winning for steam coal near the site of the Hartley Collieries, where the breaking of an engine beam caused such a great loss of life 16 years ago. The coal has been won, and working commenced. All the erections and appliances on the surface are of the most modern construction, and a great work will no doubt be developed here. The Old Durham Colliery, which has been standing some time owing to the depression, has been restarted. Other works are likely to be restarted shortly, but this depends in some cases on the result of negotiations for a reduction of the mine rents. Those rents are much too high at some works for the times, and they cannot be worked unless a reduction is got.

The Durham Coalowners' Association, as is well known, includes a majority of the coalmasters in the county, but a considerable number of coalmasters are not members, and this was to some extent, perhaps, instrumental in bringing about the late strike in Durham, as the masters outside the Association took an independent course, and reduced prices, &c., without reference to the Association. Perhaps they were justified in this course to a certain extent by the fact that at that time a larger number of the men were outside the Miners' Union. However, the men subsequently joined the Union en masse, or nearly so, and it is felt that the whole of the masters ought also to occupy a similar position, and certainly it would appear that the best course would be for the whole of the mineowners in Durham to form one Union. Whether this course will be adopted or not does not appear to be clear at present, but there have been rumours of late of an intention to form two coalmasters' associations, one in South Durham, of what are called the soft coal works, and one in North Durham. This arrangement appears to be absurd enough on the face of it.

The tide of emigration which set in here some time ago, owing to the small demand for labour, continues and increases in force. Most of the emigrants are farmers, farm labourers, and miners. Most of the emigrants proceed to the United States and Canada, but some go to New Zealand and Australia.

As noticed lately the lead trade has improved considerably here, and in the Weardale and other districts more men are employed. As might be expected, the wages of those men are very low at present, and there are still a large number of hands out. The Iron Trade continues firm, and there has been an upward movement in the prices of pig metal during the past week. The quotations generally are about—No. 1, 38s. 6d.; No. 3, 35s.; No. 4, 34s. net. There has been an increase of iron in stocks, and this has caused some surprise; however, the rise in the Scotch markets has caused an improved feeling. Orders are also coming from America for pig-iron, and an extra demand may be expected all round the next few weeks before the end of the shipping season. The Iron Shipbuilding Trade is not promising at present. Orders come in slowly, and the competition is keen; this of course affects the demand for plates. The foundries are doing pretty well. At Middlesbrough, on Tuesday, the market was not quite so active as last week. There are, however, large enquiries. The well-known works of Hopkins, Gilkes, and Co. (Limited), with blast furnaces, Danks' plant, mills, and forges were offered for sale,

and Mr. Edward Williams offered 40,000*l.* for what is above described, but a reserve bid of 120,000*l.* was put in. The concern offered separately fared no better in proportion, the bids being low as compared with the reserve, consequently no sale was made. The stocks of iron in Cleveland are 319,403 tons, about two months' make for the 79 furnaces in blast. It is, however, expected that there will be a greater demand for Cleveland pig next month for America and other places. A demand has been setting in for bars. The steel industry is active, and affords fair promise. Ship-plates are 5*l.* 2s. 6d.; common bars, 5*l.* to 5*l.* 2s. 6d. The Coal and Coke Trades have to some extent improved, but the prices do not show an upward movement.

At the North of England Institute of Mining and Mechanical Engineers' meeting, held in Newcastle on Saturday, there was a good attendance of members, Mr. E. Boyd being in the chair. A paper was read by Mr. John Daglish, of Marsden, "On an Automatic Expansion Gearing for Winding-Engines." The paper is one of much interest, and a good discussion on the subject may be expected at future meetings. This subject has received much attention from colliery engineers since the visit of the members of the Northern Institute to France, as it was found that the French engineers were far in advance of us in the construction of winding and other engines. It is well known that the consumption of coal at most of the colliery engines in this country is much too high, the expansion principle of working being either neglected or little attention paid to it. The object of this paper is to point out what has been done to remedy this defect. A paper of a useful practical character was also read by Mr. W. J. Bird "On Condensation in Steam Pipes." The readers of these papers were accorded a hearty vote of thanks by the members present. In connection with the subject of winding and other engines some improved expansion gearing has been lately introduced by Mr. Lawrence, of the Grange Ironworks, near Durham. Of course, the object aimed at is to secure an effective engine with the least possible consumption of fuel, and this has, we believe, been secured to a great extent by the invention of Mr. Lawrence.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Sept. 10.—Great depression is still felt in some branches of the slate trade. The Carnarvonshire quarry owners are taking a discount of 30 and even 40 per cent. off the list-price for the smaller sizes of slates in order to sell them. This discount is also taken off the reduced prices issued last December. It is also reported that some 200 men have received notice to leave the Penrhyn Quarries; but, perhaps, this is only preparatory to a further reduction in wages. Few of the quarries are working more than four days a week. The Quinton Colliery and Brickworks were offered for sale, by auction, at the Queen Hotel, Chester, but failed to elicit a single bid. It is rumoured that the late manager, Mr. Lomax, is about to carry on the works himself, under an arrangement with the landlord. The works at the New Crickheath Lead Mine are progressing. An Eclipse and an Ingersoll rock-drill are doing good work there, and the driving has entered into more ore-looking ground.

I am obliged to "Enquirer" for his appreciative remarks, but I regret I cannot tell the amount of money that has been spent in the Llanarmon district, or the amount that has been paid back in dividends. Excepting from Minera, which is hardly in the Llanarmon district, no dividend has, I think, been received from any mine there during the last five years. The out-door lectures I have suggested might be delivered by the professors at our various schools of mines to their students, and invitations might be given to the mineowners and managers of the district unless the latter are, as "Enquirer" seems to think, wise enough already.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Sept. 11.—A public meeting has been held at Pontypridd, when addresses, beautifully illuminated, by Rev. D. Francis, were presented to the colliery proprietors' managers who assisted at the Tynewydd rescue. Above each address is a photograph of the colliery. The following are the names of the recipients:—Mr. Edmund Thomas (Albert metallist), Maindy Hall, Pentre, Pontypridd; Mr. David Davies (Albert metallist), Cileli, Pontypridd; Mr. Thomas Jones (Albert metallist), Maindy, Porth, Pontypridd; Mr. Daniel Thomas (Albert metallist), Brithweunyd, Pontypridd; Mr. James Thomas, Troedryhiw, Pontypridd; Mr. David Jones, Cymmer Level, Pontypridd; and Mr. William Davies, Coedcae Colliery. Addresses were also presented to Mr. M'Murry, postmaster at Pontypridd, and Mr. Samuel Fudge, sub-postmaster, Porth, for services performed in connection with the telegraph department. Mr. Charles Bassett occupied the chair at the meeting, which was not numerously attended.

The hearing of the case against the West of England Bank directors has been proceeding, and at the close of the evidence for the prosecution Mr. Payne, a director, was discharged. To-day Mr. Day, who is counsel for Mr. Jerom Murch, concluded his address for the defence, and was followed by Mr. Poole, Mr. B. Petheram, Mr. Bucknill, Mr. Mortimer, Mr. Benson, and Mr. Norris, on behalf of Mr. Leonard, Mr. Coates, Mr. Allen, the Rev. H. B. George, Mr. Lucas, and Mr. Gilbert respectively.

The Iron Trade still remains in a rather more satisfactory condition, but at present no change can be noted in quotations, the slight alteration for the better in the demand not having as yet had any effect on prices. If clearances are to be taken as a criterion there is a decided improvement in trade; they have been large. Orders for America and Canada are in hand, and the demand on behalf of the former country is fairly kept up. Since last report over 3000 tons of rails have been sent to Canada, and some 3000 tons of railway iron to the United States. The demand for Bessemer steel rails is fairly good, and rates low as usual. The bar trade is moderately active, and from some of the works it is reported that stocks of pigs are decreasing. Gloomy news comes from Pentrych and Melingriffith. At the former works a stoppage has taken place, while at the latter a total cessation of operations was to take place this week. The rumour as to those old-established works being about to pass into the hands of Lord Bute is authoritatively contradicted.

The Tin-plate Trade is comparatively altered, but it would appear that the wages difficulty which affected some of the works in the Swansea and Llanelly districts may be considered as virtually tided off, it being understood that the employers have withdrawn the reduction. The Briton Ferry Tinworks have been re-started. In Monmouthshire the establishments seem rather better employed. It is satisfactory to be able to state that Mr. Phillips, of Abertillery, has taken a portion of the old Blaiva Works with the intention of transforming them into tin-plate works. The Coal Trade may be quoted as fairly active. A large order has been received by a local company for coal to be at once shipped for Malta. The order is said to be on Government account, and as troops have been ordered to India further requirements are looked forward to. The output of coal seems to be to a slight extent improving, and shipments during the past few days have been well up to the average. The enquiry for steam coals is brisk, and prices are firmer, and in some instances show a slight upward tendency, though quotations are nominally unchanged. House coals are in moderately good request. The Tredegar colliers, after a short strike, have returned to work, the wages question being amicably settled. The patent trade must again be reported as rather quiet.

No one, we should imagine, doubts the depressed and deplorable condition of the iron trade during the last three or four years, and the fact of any firm being able to realise a small profit, much more a considerable sum, within that period reads very like a "fairy tale." However, a partnership has just been dissolved which shows that a large sum has been made out of one of our important but depressed industries. In 1877 Mr. James Shaw, of Leadenhall-street, London, acquired the iron and copper works of the Governor and Company of Copper Miners, at Cwm Avon, South Wales, and took as his partners Mr. J. Spence, of Liverpool, and Mr. John Dixon, the successful "importer" of the Cleopatras Needle. Upon the dissolution of the partnership these gentlemen have now received the sum of 38,500*l.* over and above the capital they embarked a little over two years ago, besides having nothing to do with the management of the concern. They

are, in every sense of the words, "lucky partners," and have no reason to complain of the state of the iron trade.

FOREIGN MINING AND METALLURGY.

The Administration of the Belgian State Railways has just let contracts for 12,000 tons of Vignoles steel rails. The John Cockerill Company obtained contracts for 9000 tons, and the Angleur Steel-works Company for 3000 tons. The prices at which these orders were given out ranged between 5*l.* 3s. and 5*l.* 4s. per ton. These prices are somewhat higher than those recently current in similar contracts, but still they are scarcely remunerative. They will enable the works concerned to keep their staffs together, but they will not do much more. Still one fact has been established—Belgian firms and companies are growing tired of working at a loss. The Sclésin Company submitted the lowest tender (2949*l.*) for a covered gallery, to be erected at one of the Belgian railway termini. The Brussels metallurgical bourse has shown rather more animation; still there can be said to be only a small ordinary current of business.

The efforts to force up coal prices in the United States appear to have again ended in failure. At the recent sale of 50,000 tons of Scranton coal, by order of the Delaware, Lackawanna, and Western Railroad Company, there was a large attendance, but the bidding was spiritless, and the sale showed an average decline of 30*¢.* per ton. A report from the Lehigh district says that the trade there is greatly demoralised. The market is glutted, and coal is selling at less than the cost of production. There is an impression now that the great carrying companies have come to an agreement, and that a suspension of work will be inaugurated next week for a period of six or eight weeks, in order to relieve the market.

The slight revival in the iron trade of the North of France, which was announced some little time since, has produced a certain effect in the Belgian coal trade. Many orders in the neighbourhood of Mauberge and neighbouring districts are supplied with Belgian coal, and there has been some revival in orders of late. Navigation on the Mons and Conde canal has been interrupted by floods to some extent, but at the last dates matters had improved in this respect. Contracts have been let at Gand for coal, required for certain municipal services; the prices at which these contracts were let did not present any material change. M. Henrotte, sub-manager at the Hasard Collieries, has just died after a short illness at the age of 37.

The French iron trade has not experienced much change. The production of cast-iron in France for the first half of this year was 701,052 tons, or 65,284 tons less than in the corresponding period of 1878. The production of wrought-iron in the first half of this year was 391,468 tons, showing a diminution of 17,333 tons. The production of steel in the first half of this year was 154,902 tons, as compared with 139,622 tons in the corresponding period of 1878. Rails figured in this year's total for 119,600 tons. The production of coal in France in the first half of this year was 8,331,138 tons, showing an increase of 80,966 tons, as compared with the corresponding period of 1878. Krupp, of Essen, has just obtained an order for 16,000 tons of steel rails with accessories, at 5*l.* 2s. 3d. per ton, for the Wassa Railway, Helsingfors, Finland. At the Nijni-Novgorod (Russia) fair, pig presented an advance of 20 to 25 copecks per peod as compared with last year. The iron produced at Catherineburg, in some state works there, has been made of late at a loss, the expense of manufacture being somewhat high. The discovery is announced of very large deposits of ironstone in Bosnia. These are probably red hematite.

The production of coal effected last year by the Franco-Austrian Railway Company at its Klado Collieries amounted to 564,116 tons. This was the highest production attained in any one year, the company having increased the extraction, in order to make good the loss of profit resulting from a reduction in the selling price. The Steyer-dorg Colliery produced last year 150,261 tons, or 4577 tons less than in 1877; this reduction arose principally from the diminution in the consumption of the Anina forge. For the same reason the Doman and Szekul Mines, which supply the Resicza Ironworks, only extracted 66,690 tons in 1878, against 77,542 tons in 1877. The production of the company's ironstone mines was also affected by the condition of metallurgical industry last year, and was only 44,201 tons, as compared with 48,857 tons in 1877. The company's steelworks produced last year 20,498 tons of ingot, which were employed in the manufacture of rails, tyres, axles, and plates. The company's construction workshops at Resicza completed several large bridges last year.

We learn from a German contemporary that experiments in de-phosphorising iron have lately been successfully made in Herr Krupp's establishment at Essen, in the presence of representatives of the iron and steel industries of England, Belgium, and the United States. By Herr Krupp's process the raw iron was freed from 2 to 2½ per cent. of phosphorus, and was also liberated from nearly the whole of the silica, iron of excellent quality being obtained. The result being iron and not steel, it has yet to be seen whether Messrs. Thomas and Gilchrist's process will not prove superior. There appears to be some doubt also as to whether the Krupp process will not be too costly for practical purposes.

The French company whose purchase of Prince Golizyn's iron mines in Russia, adjoining the Ural Railway, we reported some time ago is about to erect there large works for the production of steel rails.

TRADE IN THE UNITED STATES.

England has almost, if not quite, as deep a commercial and financial interest in the great revival of business now going on in the United States as that country has itself. The commercial world is not confined within the limits and bounds of State lines, nationalities, and empires. It has its own broad domain, and no great state can prosper and increase its wealth without sharing its prosperity with other commercial and manufacturing centres. The merchant marine of England derives a revenue of 40,000,000*l.* per annum for carrying freight and passengers to and from the United States, and as the volume of this business increases of course this large interest is rendered more profitable. Orders for English fabrics are coming forward from the United States by every mail on a greatly enlarged scale, to meet the demands of the Fall trade, which promises to be very active. We note important sales of English rails in New York, and a much better business is doing in Scotch pig-iron at improved prices.

It requires long years of labourious preparation to develop a country with such an extent of territory as the United States has. Artificial water-ways and canals have to be constructed of great length and capacity, rivers and harbours improved, extensive public works of all kinds undertaken and completed, and, above all, a vast system of railways constructed. To show what the United States have done in this direction in 1850 their railway system embraced 9021 miles. In 1879 it embraces 82,000 miles of completed railways in working operation, while 15,000 miles are under construction and surveyed.

The railway mileage of the United States is more than one-half of that of all the rest of the world combined. The construction and equipment of this vast railway system cost 1,000,000,000*l.* sterling. It is estimated during the year 1879 there will be transported on them products of the country to the value of 3,000,000,000*l.*, and that their earnings will amount to 110,000,000*l.* The population of the United States in 1850 was 55,000,000, and it is now estimated, taking the regular percentage of increase based on the census tables from 1810, that the population is 53,000,000. Preparations are now being made for taking the census in 1880. As another instance of the rapid growth of the United States since 1850, in that year the entire taxable property of the country was returned at 1,200,000,000*l.* In 1878 it had increased to 8,000,000,000*l.*

The crops of the United States this year are unusually large. The cotton crop of last year was 5,250,000 bales; this year it is estimated at 6,000,000 bales. The wheat crop will be 500,000,000 bushels, or 62,500,000 quarters. In supplying us with cheap and wholesome breadstuffs the United States increases our power of cheap production. There never was a time in the history of the United States when English capital intelligently and carefully invested had so sure a promise of large returns. The United States resumed specie payments on Jan. 1, 1879. Since the day of resumption the specie reserve has steadily increased. At the Bankers' Convention, held in

Saratoga, New York, on August 7, Controller Knox, who is the Controller of the Currency, in the course of his address stated:—"The man cannot be found in all this land who, since the resumption of specie payments, has demanded a dollar of coin because he lacked faith in the issues of the Government or the banks."

The balance of trade in 1878 was \$60,000,000, in favour of the United States. This year, in consequence of the larger demand for their breadstuffs in France as well as England, it will probably be 70,000,000, while their outputs of gold and silver are upon a greatly increased scale. The yield of Colorado this year alone is estimated at thirty to fifty millions of dollars, as against twelve millions last year. The United States has now created the machinery for solid and substantial development. Its lands are widely cultivated, and its mines skilfully, scientifically, and profitably worked in most instances. Its transportation system is comprehensive and very cheap. Its great rivers have been deepened and improved.

CHROME AND COBALT IN NORWAY.—Chrome has been worked in Norway, at Tonsset, in Northern Ostfold, since the beginning of this century, and new mines were opened in 1821 at Roros, and later on at Ranen. From that time till 1832 the exportation of iron chrome was at the rate of 250 tons a year. Between 1841 and 1845 this figure mounted up to 585 tons, and a chrome of potash factory was started at Trondhem in 1844, which produced annually 111 tons. In 1865 the price of chrome was so low that the mines ceased working and did not recommence till 1873, since when the annual yield has been 175 tons. Cobalt mines were first opened just a hundred years ago at Modum and near Snarum. Like the chrome, there was so little demand for it that between 1866 and 1870 only 30 tons were obtained; but the average product from 1871 until now has been 58 tons a year. About 115 men are generally employed in the cobalt mines, and the annual value of the yield is estimated at 150,000 fl.

ROYAL SCHOOL OF MINES.

DEPARTMENT OF SCIENCE AND ART.
During the TWENTY-NINTH SESSION 1878-80, which will commence on the 1st of October, the following COURSES OF LECTURES AND PRACTICAL DEMONSTRATIONS will be given:—

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| 1.—CHEMISTRY | By E. FRANKLAND, Ph.D., F.R.S. |
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| 3.—BIOLOGY | By T. H. HUXLEY, LL.D., F.R.S. |
| 4.—MINERALOGY | By WASHINGTON W. SMYTH, M.A., F.R.S.,
Chairman. |
| 5.—MINING | By JOHN W. JUDG, F.R.S. |
| 6.—GEOLOGY | By T. M. GOODRICH, M.A. |
| 7.—APPLIED MECHANICS | By FREDERICK GUTHRIE, Ph.D., F.R.S. |
| 8.—PHYSICS | By Rev. J. H. EDGAR, M.A. |
| 9.—MECHANICAL DRAWING | By Rev. J. H. EDGAR, M.A. |
- The Lecture Fees for Students desirous of becoming Associates are £30 in one sum, on entrance, or two annual payments of £20, exclusive of the Laboratory. Tickets to separate Courses of Lectures are issued at £3 and £4 each. Officers in the Queen's Service, Her Majesty's Consuls, Active Mining Agents and Managers may obtain Tickets at reduced prices. Science Teachers are also admitted to the Lectures at reduced fees. For particulars (free), or for Official Prospectus (price 6d., by post 7d.), apply to the Registrar, Royal School of Mines, Jermyn-street, London, S.W.
F. W. RUDLER, Registrar.

TO CAPITALISTS, PROMOTERS, INVESTORS, &c.
MINING ENGINEER of large experience in the WEST OF ENGLAND is in a position to obtain VALUABLE MINERAL GRANTS for clients on easy terms, and to introduce PROGRESSIVE PROPERTIES requiring very little additional expenditure to enable considerable returns to be made. With improved trade large profits are certain.
Address, "C.E., F.G.S.," MINING JOURNAL Office, 26, Fleet-street, London.

MINING ENGINEER, now in Italy, and about returning to England, would inspect and report upon MINES and MINERAL PROPERTIES before his return. The Advertiser is a Practical Miner, with many years of varied foreign experience. Would visit other countries in South of Europe. Knowledge of French, Spanish, and Italian. Highest references for ability and probity.
Address, "Engineer," care of T. Hamilton and Co., 34A, Throgmorton-street, London, E.C.

TO PARENTS AND GUARDIANS.
AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and obtain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.
HERBERT C. JONES,
32, Wellington-street, Toronto. Canada Land and Loan Agency.

IMPORTANT TO INVESTORS.
THE ADVERTISER HAS SECURED A VERY VALUABLE CHINA-CLAY PROPERTY. The clay is of the very best quality; it always commands a ready sale at the very highest market prices. The clay is well known to all large buyers and consumers. There are large kilns, tanks, and micas on the works. South-Western Railway passes in front of kiln. Satisfactory reasons given for late proprietors going out. With a little extra machinery 12,000 tons per annum can be put in the market at a good profit.
WANTED, the assistance of a few capitalists, or a capitalist, to THOROUGHLY WORK THE PROPERTY. Every investigation is courted.
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AN IMMENSE TIN DEPOSIT.
THE ADVERTISER HAS AN IMMENSE DEPOSIT OF TIN in a high hill that will PAY LARGE PROFITS AT ONCE. Engine and stamps, &c., are ready to start. He wants a gentleman to HELP START IT INTO A COMPANY. A large sum can be made here.
Particulars can be had by addressing to "Engineer," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

FOR SALE, A NEW 70 inch CYLINDER CORNISH BEAM PUMPING ENGINE, 10 ft. stroke in cylinder and 9 ft. in the shaft, with steam case, metallic piston, and wrought gudgeon. The false cover, perpendicular pipes, weigh posts, working and nozzle gear all fitted bright. A strong substantial well made engine, complete, including cast-iron casings for top and bottom nozzles with bright covers, holding down bolts and wrought-iron caps and bolts for connection to main rod.
Apply to WILLIAM'S PERRAN FOUNDRY COMPANY, Perranarworthal, Cornwall.
Dated Jan. 29, 1879.

SPAIN AND PORTUGAL.
MR. J. T. JOHNSON, Assoc. Inst. C.E., F.G.S., &c., CIVIL and MINING ENGINEER, late of Chester and South Wales, having joined his brother, Mr. T. M. JOHNSON, who for the last 13 years has been engaged in Mining in Spain and Portugal, is prepared to INSPECT PROPERTIES and CARRY OUT GENERAL MINING and ENGINEERING WORKS in those countries.
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GLASGOW, AND THE HIGHLANDS.
ROYAL ROUTE VIA CRINAN AND CALEDONIAN CANALS by the Royal Mail Steamer "COLUMBA," or the "IONA," from GLASGOW BRIDGE WHARF DAILY at Seven A.M., and from GREENOCK at Nine A.M., conveying passengers for OBAN, NORTH and WEST HIGHLANDS. Official Guide Book, 2d. Bill, with Map and Tourist fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post from the Owner, DAVID MACBRATNE, 119, Hope-street, Glasgow.

Now ready.
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THE PRINCIPLES AND PRACTICE OF HAND OR SIMPLE TURNING.
Illustrated by upwards of 750 woodcuts.
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Table of contents, free by post on application to HOLTZAPFFEL and Co., 64, Charing Cross, and 127, Long Acre.

Now ready, price 3s., by post 3s. 3d., Sixth Edition; Twentieth Thousand Copy, much improved, and enlarged to nearly 300 pages.

HOPTON'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measurement, and other information on the moving and propelling power of ventilation, a subject which has caused so much controversy.
The following few testimonials, out of hundreds in Mr. Hopton's possession, speak to the value of the work:—
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London: MINING JOURNAL Office, 26 Fleet-street, E.C., and to be had of all booksellers.

In the Court of the Vice-Warden of the Stannaries.

STANNARIES OF CORNWALL.
IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867, and of the NEW PERRAN MINERALS COMPANY (LIMITED).—TO BE SOLD, under the direction of the Registrar of the said Court, on Thursday, the 18th day of September next, at Twelve o'clock at noon, at the DUCHY PERU MINE, in the parish of Perranarabulo, within the said Stannaries, in One Lot, and subject to such conditions as shall be then and there stated and produced, the WHOLE of the following

PLANT, MACHINERY, MATERIALS, AND EFFECTS,
Including all the IRON ORES, LEAD, MANGANESE, and OCHRE belonging to the said company, being at surface at the respective Mines hereinafter mentioned, or some of such Mines:—

AT THE DUCHY PERU MINE.
60 in. cylinder PUMPING ENGINE, 10 ft. by 9 ft. stroke, with 2 boilers 22 tons; balance bob, complete; shears and shive; shaft tackle, with shives and landing brace; 1 PORTABLE ENGINE, 2 8 in. cylinders, with cage and cog wheel attached; wire rope and chain; capstan drum, cog wheel and stand attached; 100 fms. 4 1/2 in. capstan rope; viaduct (20 fms. long), with iron stands, wood railings, &c., complete; portable winding engine, 2 12 in. cylinders, with large cog wheel, winch, cage, and connections; 200 fms. flat wire rope; 60 wood-tram wagons, with iron wheels, side plates, boiler, and rod plates; several tons of rail iron of various sizes; smith and miners' tools; several weighbridges, complete; several horse whims, with wire rope and chain; 525 fms. of railroad and wood sleepers under ditto; 70 fms. 18 in. pitwork; 50 fms. 14 in. rods; rod plates; staples and glands; bolts, &c.; 70 fms. double skiproad; dials and stands; level and stand, and levelling staff; ACCOUNT HOUSE FURNITURE; office tables; chairs and desk; copying press; iron safe; clocks; looking glasses; iron beds, bedding, mattresses, wash stands, toilet sets, &c.; venetian blinds; also about 50 tons of ochre, and 12 tons of sulphur mounds or iron pyrites.

AT THE TREMBLE MINE.
50 in. cylinder PUMPING ENGINE, 10 ft. by 9 ft. stroke, with 2 boilers, shears and shive; balance bob; portable engine, 2 8 in. cylinders, with winding cage attached; wire rope and chain; capstan drum and stand, with cog wheel and fly wheel attached; capstan rope; 1 14 in. doorpiece; 1 15 in. 6 ft. wind bore; shives; pumps; boiler; and parts of portable engine; rod plates; railway weighbridge; double power winch; 20 ft. water wheel, with crank; small and large cog wheels; circular saws; tram carriage wheels; kitchen stoves; bedsteads; tables; smiths' shop; bellows, anvil, smiths' tools; mandrill; grinding stone, and frame; Burleigh Rock Drill, with stand, and hose; about 8 cwt. of lead ore, and 500 tons of iron ore.

AT THE HALWYN MINE.
Shears and shives; shaft tackle and shive; iron winding cage and cog wheel; 13 fms. 8 in. drawing lift; 18 fms. of ladders.

AT THE GRAVEL HILL MINE.
26 in. WINDING ENGINE, 7 ft. stroke, with fly wheel; iron cage, and 1 10 tons boiler complete; flat wire rope and chain; balance bob and iron rod attached; shaft tackle, with 2 shives; landing brace and flooring; tram wagons; large and small pulleys and stand; horse whim, cage, and ladders; 30 fms. 8 in. plunger lift; rods and plates; 30 fms. skip road; portable engine; 2 8 in. cylinders; pumping gear and crank; balance bob, and chain; 12 in. drawing lift; 100 fms. 6 in. wood bob; 20 sets of tram wheels; several cwt. of chain and bar iron; 1230 fms. of railroad wood sleepers; about 600 tons of iron ore.

AT THE RUTHERS MINE.
50 in. cylinder PUMPING ENGINE, 10 ft. by 9 ft. stroke, with 1 boiler 11 tons; shears and 2 shives; capstan; 3 horse whims; horse whim kibbles; 180 fms. wire rope, and chain; iron tram wagons; weighbridge; carpenter's bench and tools; bolts; vice; kibbles; chests; bucket rods, and sundry iron pumps; and about 40 tons of manganese.

AT THE WHEEL EDITH MINE.
Wood carpenter's shop; old iron and shive; old tube; saw pit frame; several pieces of timber; 7 9 in. pumps, and matching; 7 iron bobs; part of balance bob, together with numerous other effects in general use in mines.

To inspect the above, apply to the Bailiff in charge at the above mentioned respective Mines; and for further particulars to Mr. JOHN HENRY HAMLEY, the Official Liquidator of the said company, Truro; or to HODGE, HOOKIN, and MARRACK, Truro. (Solicitors for the said Official Liquidator.)
Dated Stannaries Court Office, Truro, this 30th day of August, 1879.

SALE BY AUCTION OF COLLIERY PLANT AT HOWARD'S WEST HARTLEY COLLIERY, NETHERTON, NEAR MORPETH, NORTHUMBERLAND.

MESSRS. JOEL AND SON have received instructions TO SELL, BY AUCTION, on Wednesday, September 24th, and following days, the WHOLE of the

FIXED AND LOOSE PLANT.
Of the above COLLIERY, consisting of—
300 tons D.H. IRON and STEEL RAILS, 75 lbs. per yard; chaldron COAL WAGONS, wheel W.I. tyers; WINDING and PUMPING ENGINE, 4 1/2 in. cylinder 6 ft. stroke; pair of HAULING ENGINES, 26 in. cylinders 4 ft. 6 in. stroke; pair of PUMPING ENGINES, geared 3 to 1, 14 in. cylinders, 22 in. stroke; WINDING ENGINE, 18 in. cylinder, 4 ft. stroke, 7 ft. drums; HORIZONTAL ENGINE, 15 in. cylinder, 36 in. stroke, with reversing gear; SAW MILL ENGINE, 12 in. cylinder, 20 in. stroke, engine 4 in. cylinder 5 in. stroke; GUINAL VENTILATING FAN, 24 ft. diameter, with engine cylinder 18 in. diameter, 20 in. stroke; JACK ENGINE, 10 in. cylinder, 20 in. stroke; pair of PUMPING ENGINES, 14 in. cylinder, 36 in. stroke; FOUR LOCOMOTIVE ENGINES, 13, 14, 15, and 16 in. cylinders, 4 ft. 8 1/2 in. gauge; FIVE double-flued BOILERS, 28, 30, and 34 ft. long, by 7 ft. 6 in., and 8 ft. 6 in. diameter; eleven egg-ended cylindrical boilers, various sizes; sets of 16 and 17 in. pumps, complete; 3, 5, 8, and 9 in. flange and socket pipes; iron and wood coal tubs; side-pit stone wagons; screens; flat sheets; pulleys; ropes; chains; iron and steel wire ropes; bank weighing machines; new 4 ft. turntables; Pooley's indicators; 20 ton weighing machine; 9 in. double acting pump; 16 in. centre gap lathe; a donkey engine; the best seats; 100,000 bricks; and the usual material for colliery purposes.
The owners reserve the right of withdrawing any of the above before the day of sale.
For catalogues apply to the Auctioneers, or to Messrs. WEAR and COLLEY, Broad Chare, Newcastle-on-Tyne, who will furnish any further information required.

COUNTY OF MERIONETH.
SALE OF VERY VALUABLE FREEHOLD FARM AND SLATE QUARRYING AND LEAD MINING PROPERTY, in the parish of Ffestiniog.

MESSRS. WILLIAM DEW AND SON WILL SELL, BY PUBLIC AUCTION, at the Penguin Arms Hotel, Ffestiniog, on Tuesday, September 30, 1879, at One o'clock in the afternoon, subject to conditions then and there to be produced,

HAFODYSFYTTY, otherwise GAMALLT,
Containing 489a. Or. 18p. This FARM is distant 1 1/4 mile from Blaenau Ffestiniog. Some of the BEST SLATE VEINS in the Ffestiniog District are known to run for a considerable distance through the farm, and both eminent geologists and practical quarrymen in the neighbourhood have given it as their opinion that a large and productive output of the finest SLATE could be obtained from the property with a very moderate amount of labour. Several lodes of LEAD have also been proved on the property, and could be at once profitably worked.
There is ample water power for driving machinery.
Particulars and lithographed plans, prepared by Mr. C. E. Spooner, of Portmadoc, C.E., showing the sections of the slate veins and lead lodes, may be had on application to Messrs. BREZEE, JONES, and CASSON, Solicitors, Messrs. JONES and JONES, Solicitors, both of Portmadoc; and the Auctioneers, Wellfield House, Bangor.

PRELIMINARY ADVERTISEMENT.
IN LIQUIDATION.
THE PERRY COLLIERY (LIMITED), PERRY BARR, NEAR BIRMINGHAM.

MESSRS. JOSEPH COCKSEY AND SON have received instructions from the Liquidators TO SELL, BY AUCTION, early in the month of October, the very superior

MACHINERY, ERECTIONS, COLLIERY PLANT, & STOCK,
Including a railway siding, being upon the premises in the occupation of the company, situate within a few minutes walk of the Great Barr Station, on the London and North-Western Railway between Birmingham and Walsall.
Particulars will be given in future advertisements; and further information may be obtained on application to Messrs. CARTER and CARTER, Accountants, 33, Waterloo-street, Birmingham; Messrs. S. and J. H. PERRY BARR, near Birmingham; or to the Auctioneers, Paradise-street, West Bromwich.

POSTPONEMENT OF SALE OF IMPORTANT SILVER-LEAD MINE.
TO BE SOLD BY AUCTION, within Dowell's Rooms, No. 26, George-street, Edinburgh, on Wednesday, the 8th October, 1879, at Two o'clock P.M., instead of 10th September, as formerly advertised, that

VALUABLE SILVER-LEAD MINE,
Situated in the ISLAND OF SARDINIA, called GIBBAS.
The sett, which is extensive, is within a mile of Porto Corallo, where the mineral is shipped in barges, and is distant about thirty miles from Cagliari, to which there is a good Government road. There is a full equipment of pumping, drawing, and dressing machinery to be sold with the mine.

SHORT REPORT.
"Llanbadarn, Cardiganshire, 1st August, 1879.
"Having had charge of the Gibbas Mine during the campaign of 1877-8, and being well acquainted with the metalliferous features of the sett, I am of opinion that with a moderate outlay judiciously applied the mine will produce large and profitable returns of lead ore.
(Signed) S. Y. DUNN.
For particulars, apply to Mr. JAMES MARTIN, C.A., 49, Castle-street, Edinburgh; or to Messrs. GILLESPIE and PATERSON, W.S., 81A, George-street, Edinburgh, Scotland.

TO BE SOLD, BY PRIVATE TENDER, the VALUABLE LEASEHOLD MINES and PREMISES, known as the LOWER VAN (or GLANGUDEN) and NANTAGO LEAD MINES, situate in the county of MONTGOMERY; together with the HOUSES, BUILDINGS, PLANT, and MACHINERY thereto belonging.
Tenders to be sent in to Mr. JAMES FRASER, the Liquidator of the Lower Van and Nantago Lead Mines (Limited), at his offices, No. 9, King's Arms-yard, London, E.C., not later than 30th September inst.
Particulars and conditions of sale, and forms of tender, may be obtained of E. S. FRASER, Esq., Solicitor, 23, Moorgate-street, London, E.C., and of the Liquidator.

CRANSTONHILL ENGINE WORKS, GLASGOW.

(ALEX. CHAPLIN AND CO.)

FOR SALE, BY PRIVATE BARGAIN, as a GOING WORK, the WHOLE STOCK-IN-TRADE and PLANT (including the GOODWILL and LEASE) of the old established ENGINEERING BUSINESS of ALEXANDER CHAPLIN AND CO.
The business has been carried on for upwards of 30 years with great success, and it is rarely that so eligible an opening occurs. The STEAM CRANES, ENGINES, &c., made by the firm have long had a first-class reputation both at home and abroad.

The STOCK and PLANT have been valued at £24,500. The Works are in full going order, and immediate entry may be had.

Sealed offers, endorsed "Offer for Cranstonhill Engine Works, &c.," to be lodged on or before Wednesday, 17th current, at One o'clock P.M., in the hands of the subscribers, from whom further particulars may be obtained.

The subscribers do not bind themselves to accept the highest or any offer.

3rd September, 1879. MOORE and BROWN, C. A., 128, Hope Street, Glasgow.

VALUABLE FREEHOLD COLLIERY WITH COAL AND IRONSTONE MINES.

TO BE SOLD, either the WHOLE or PART of LESSOR'S INTEREST in a LARGE FREEHOLD COLLIERY in one of the North Midland Counties, also a LARGE AREA of LEASEHOLD COAL, with power to work thereout as much as possible during eleven years, without any further payment to Lessor.

The coal is of high repute in the London and Southern Markets, and the plant is powerful and efficient, and included in the Lessor's interest, and is capable of raising a minimum of 4000 tons of coal per week. There is ample siding accommodation in connection with the Midland Railway Company's Main Line to London. The Advertiser would be prepared to CO-OPERATE with the PURCHASER in WORKING the COLLIERY, finding his proportion of Capital for such purposes. For particulars, apply to Messrs. J. and P. HIGSON, Civil and Mining Engineers, 18, Crown Buildings, Booth Street, Manchester.

18 H.P. PORTABLE STEAM ENGINE, with link motion, reversing gear, ready for delivery; also gear to wind and pump.
A 9-h.p. VERTICAL STEAM ENGINE, with link motion, reversing gear (winding drum if required).
A 6-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER, with carriage and travelling wheels.

Apply to—
BARROWS and STEWART, ENGINEERS, BANBURY.

22 IN. AIR COMPRESSOR, on massive bed-plate, with slide bars, connecting rods, and crank, FOR SALE (CHEAP).
Improved AIR COMPRESSING ENGINES, with 12 and 9 in. cylinders. Also AIR OF 9 inch WINDING ENGINES complete, with 4 feet drum, geared 3 to 1.

Apply to—
WARSOP and HILL, ENGINEERS, NOTTINGHAM.

HORIZONTAL ENGINE, 15-horse power, strong, and well-finished, with fly-wheel, wrought crank shaft 5-in. diameter, and massive box bed; suitable for winding or general purposes; quite new. Price £70.
HORIZONTAL ENGINE, 8 in. cylinder, beautiful and most improved design, new and complete, with pump and governor. £38.

ALEXANDER SMITH,
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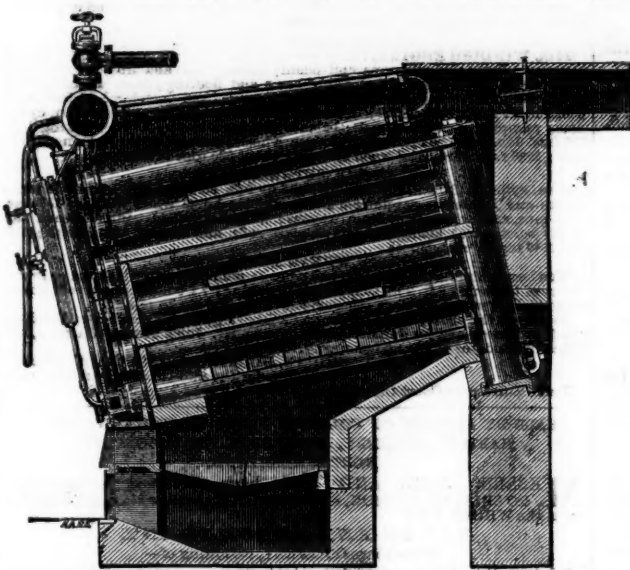
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